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Archives of Pediatrics:

A MONTHLY JOURNAL DEVOTED TO THE DISEASES OF

Infants and Children.

EDITED BY

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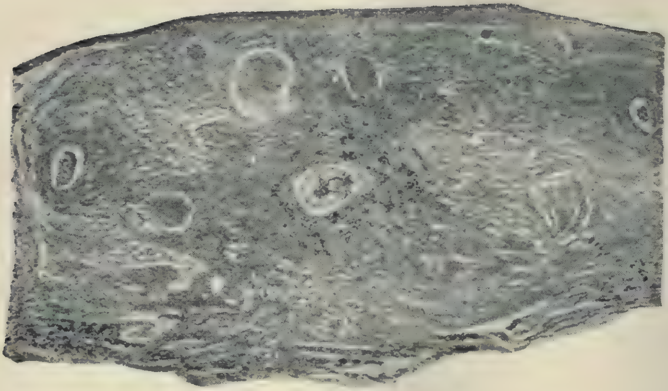


Fig. 10.

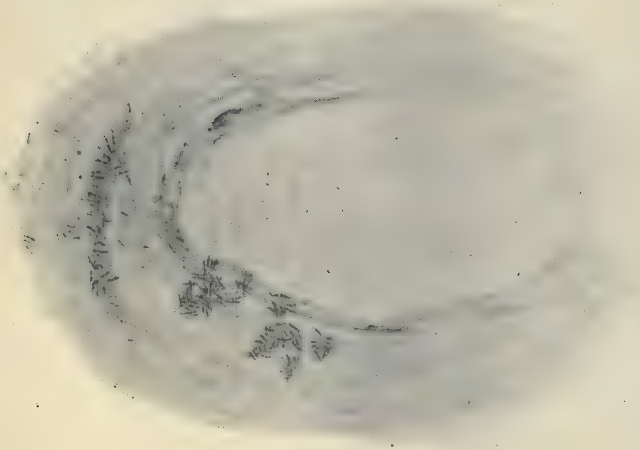


Fig. 11.

TUBERCULOSIS OF THE CHOROID
DR. GEORGE CARPENTER.

ARCHIVES OF PEDIATRICS.

VOL. XII.] JANUARY, 1895. [No. 1.

Original Communications.

TUBERCULOSIS OF THE CHOROID.

BY GEORGE CARPENTER, M.D., LONDON.

Senior Physician to Out Patients at the Evelina Hospital for Sick Children, London.

The accompanying illustrations of choroidal tubercle are reproductions taken from my original drawings of this condition. Some of them appeared in colors in the *Illustrated Medical News*, some time defunct, for December the 7th and 14th, 1889. Others were specially prepared for the M.D. graduation Thesis, in 1890, at the London University, and reproductions of these appeared in the *British Medical Journal* of July 11th, 1891, page 66. In neither case did they come within measurable distance of the originals, and in particular was this so when produced on the thin, unsuitable, and hastily printed paper of the latter journal. Dr. Dillon Brown has therefore kindly placed the ARCHIVES OF PEDIATRICS at my disposal to reproduce the series of my drawing of this rare and little known affection. The importance, from the medical ophthalmoscopist's point of view, of being able to detect these bodies during life cannot be over-estimated, and the assistance they offer to the clinician in the elucidation of a doubtful case is sometimes great; indeed they may throw an altogether new light on what would have been otherwise deemed a non-tubercular case, post mortem even.

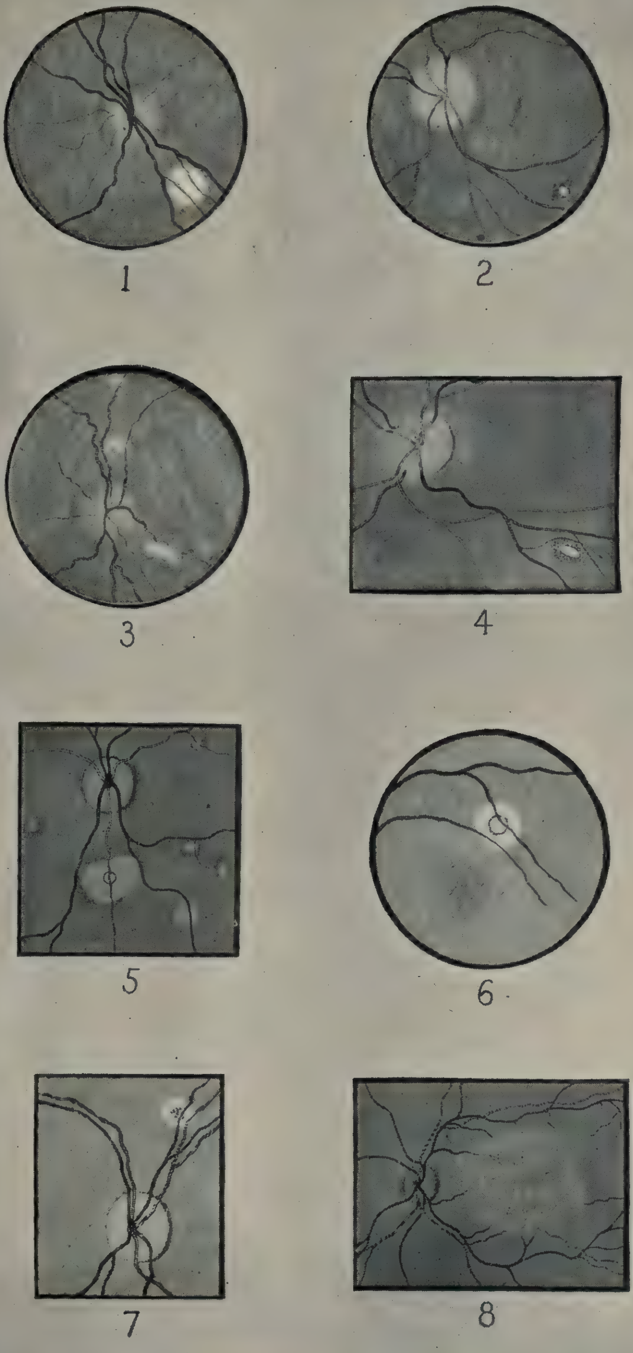
Case I., I. R., a female, æt. three years, was brought to out-patients in 1889 with the symptoms of meningitis, and died the same day. She had well marked optic neuritis. The tubercle in the right eye (Fig. 1) was of paper whiteness and fairly clearly cut, but round the margin there was a narrow rim of haze of a pink color, with a trace of white in its composition. "Steamy" would perhaps describe it. The vessels crossing the tubercle were clearly cut, but the uppermost bent slightly as it mounted up the edge of the tubercle. The tubercle was distinctly raised. In the lower outer quadrant of the left eye, (Fig. 2) in the periphery, there was a small tubercle, somewhat irregular in outline, but on the whole, circular, of a white color, presenting a well-defined margin, there being no loss of distinction between the white body and the red choroidal reflex. At the autopsy the brain presented the usual appearance of tubercular meningitis, and gray tubercles were also found in the lungs, liver, kidneys, spleen and bronchial glands. In the right eye, in the choroid, was a gray tubercle the size of a pin's head. In the left eye, about half an inch from the optic papilli, in the choroid, a small irregularly circular body, about the size of a pin puncture, and whitish in color. The microscopical appearances of the first growth were briefly as follows: The growth was tubercular. The hyaline membrane in front was undisturbed, and posteriorly its limitation was marked off by a layer of healthy-looking choroidal pigment corpuscles.

Fig. 10 shows under a low power (x100) a small caseating area surrounding a central vessel in this tubercle, together with clusters of tubercle bacilli.

Fig. 11, is the same, seen under an oil-immersion (Zeiss $^1/_{15}$ obj. 4 oc.) A few only of the clusters of tubercle bacilli have been drawn.

Case II., E. A., a female, æt. six years, was admitted (June 1888,) suffering from meningitis, and died in ten days. She had well-marked optic neuritis. The following description applies to the drawing (Fig. 3,) sketched from the left eye.

The tubercle at the top of the field was pale yellow, except in the centre, where there was a small white



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TUBERCULOSIS OF THE CHOROID

DR. GEORGE CARPENTER.

speck, and its margin was ill-defined. Crossing its face was an artery, which was in perfect definition. The tubercle immediately below it was pale gray in color, tinged with yellow, the margin somewhat darker gray and hazy. This tubercle was situated between two large retinal vessels, which were unaffected. The tubercle at the bottom was pale gray, with the exception of a small, white shining spot in the centre, and its margin was deeper gray and fairly well defined. A very tortuous retinal vessel crossed the upper portion of this tubercle, and this maintained its light streak throughout its course with perfect distinctness. There were not any tubercles in the right eye. At the autopsy tubercles were found in the lungs, liver, and mesenteric glands. There were tubercular meningitis and tuberculous intestinal ulceration above the ileo-cœcal valve, and in the transverse colon. The tubercles in the choroid were grayish in appearance. Tubercle bacilli were found in them.

Case III., A. P., a female, æt. five years, was admitted into hospital in 1885 with meningitis.

Situated in a fork of the lower descending vein of the *left eye* was an oval tubercle, somewhat whitish in color, *vide* Fig. 4. It was bounded by a darkly pigmented ring, and surrounding this was a halo which presented little islands of black pigment, granules dotted over a grayish sea, which gradually blended with the surrounding retinal pigment. Crossing the upper portion of the halo were two small vessels, offshoots from the parent trunks, which were in perfect outline as they crossed the patch. The tubercle was slightly raised. Both eyes showed optic neuritis. In the case of the left, *vide* Fig. 4, the swelling was confined to the nasal half of the optic disc; the temporal being free from swelling and presenting a well defined margin. At the autopsy basal meningitis, of an apparently simple character, was found. There were not any tubercles visible to the naked eye, and all her organs were healthy and free from macroscopical tuberculous deposits. In the choroid was an oval patch, slightly fawn colored, and measuring about a line in the long diameter. It was surrounded by a deeply pigmented margin, which was somewhat patchy on critical examination. Microscopically it was bounded by the hyaline membrane in front, and behind by the pigment cells proper to the choroid. The growth was tuberculous, and tubercle bacilli was demonstrated. Although many sections were examined, in not a single instance was disturbance of the choroidal pigment observed, and the darkly pigmented ring surrounding this body during life must have been due to some alteration in the retinal pigment, either caused by a heaping up of the existing pigment cells, or migration of choroidal pigment, or due to an intensification of the pigmented granules in the cells themselves.

A microscopic drawing of the growth is given. See Fig. 9 (x85.) Only a portion of the sclerotic is shown, and the retina has been removed.

Case IV., E. S., a male, æt. six and a half years, attended out-patients (June, 1889,) for wasting, headache, lassitude, and a bad cough of three weeks' duration. A heavy looking, somewhat drowsy, spare boy, with an enlargement of the liver and spleen, and breathing very quickly, without sufficient cause as gathered by the physical signs. *Left eye.* When the child looks into the extreme inner canthus, and a little upwards, two fawn-colored tubercles are seen, one in shape somewhat reniform, and the other bluntly triangular. Both are very small, many times smaller than the optic disc. They are quite defined from the retinal pigment, which next them is a trifle darker than elsewhere. A minute retinal vessel passes over the edge of one with perfect definition. *Right eye.* Between the descending veins is a tubercle irregularly oval, and a trifle smaller than the optic disc, which is of a lighter fawn color than those previously described in Fig. 5. It has a reddish-black irregular margin, the redness, due to the red reflex,showing through the retinal pigment, which is here a shade or two darker. There is no haze. At one spot the retinal pigment is, as it were, shaved off obliquely, and has the appearance of gradu-

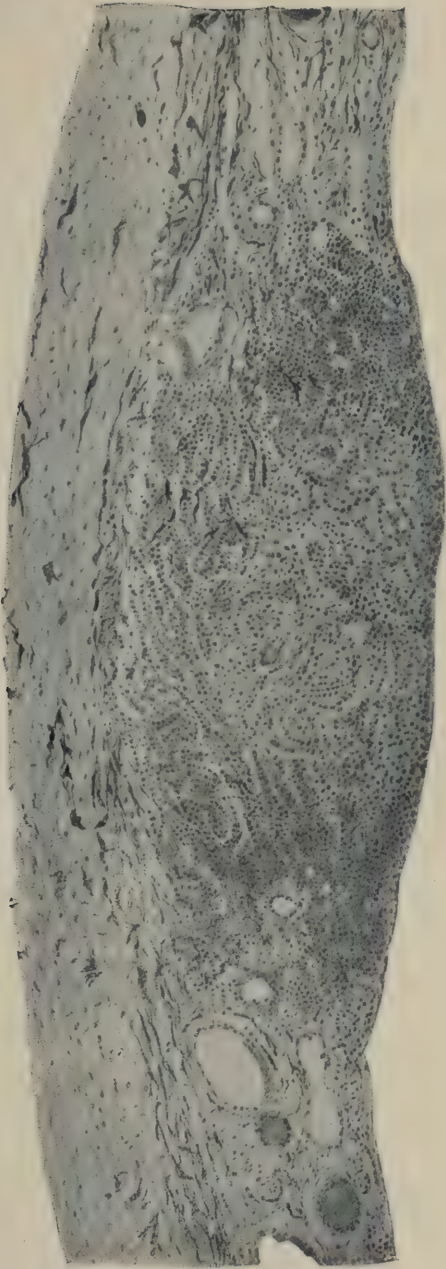

Fig 9.

TUBERCULOSIS OF THE CHOROID
DR. GEORGE CARPENTER.

ally thinning off towards its edge. In the centre is a minute narrow black ring of retinal pigment, and this ring is filled in with the same fawn color which is seen in the body of the tumor. This tubercle is crossed in the centre by an artery. The artery is in perfect definition. The vein passing to the temporal side crosses its margin partly on the face of the patch, partly on the pigmentary edge. It is well defined. This tubercle appeared to be raised, but I was in doubt as to its refraction, as the child's eyes were extremely restless. At some little distance from this, and crossed by the vein running to the nasal side, is a fawn-colored tubercle, circular in outline, but with an ill-defined margin. It gives one the idea of the retinal pigment having been thinned off with a camel's hair brush. The vein passing across this body is well defined. Several other tubercles, the same as in the left, are to be seen in different parts of the fundus. When in the proximity of a retinal vessel this crosses them with perfect definition.

The child died while under the care of Mr. Archer Wood, of Dulwich. No autopsy was made. From his symptoms detailed by Mr. Wood, together with the ophthalmoscopical appearances, there is no doubt he died of general tuberculosis.

Case V., G. C., æt. two and five-twelfths years, attended out-patients, January 23, 1890. He was rachitic, the physical signs were those of bronchitis, and he whooped. The liver and spleen were both enlarged, and he was emaciated. Between this date and February 10th he passed a "lot of blood" by the bowel. An ophthalmoscopic examination revealed the following :

At the left yellow spot region, *vide* Fig. 8, there was a raised quadrangular tubercle with very ill-defined margin, in size roughly about eight times that of the optic disc and in color a dirty gray. The retinal pigment crossed it and covered it irregularly, being intensified in one spot, in another thinned out, and every here and there a zigzag rift was noticeable in the darker portions. The retinal vessels crossed it. There were very many of them, and they were only fairly distinct, being blurred a little. A light streak on them could not be detected, and the retina was evidently œdematous. In both eyes there was slight optic neuritis. The patient died on March the 7th of general tuberculosis. Gray tubercles were found in the lungs, liver, spleen, kidneys and peritoneum. There were multiple small, punched-out ulcers along the large and small intestine, and the mesenteric glands were caseating. The meninges contained tubercles. A large gray tubercle was found at the yellow spot region of the left eye.

Case VI., H. B., æt. three years, had had the left hip excised for tuberculous disease, and was suffering from an abscess of the right hip. His eyes were examined on April 10th, 1890.

Situate at some little distance from the optic nerve of the left eye, which presented no signs of neuritis, was an oval tubercle of paper-white color, with its long axis lying at an acute angle with the horizontal meridian of the disc, *vide* Fig. 7. The tubercle was six or seven times smaller than the optic disc, and presented in its centre seven isolated black pigment grains. The edge was fairly defined from the retinal pigment, giving much the appearance of the immediate neighboring retinal pigment having been thinned off with a camel's hair brush. A main branch of the vein and artery passing to the nasal side crossed its surface undisturbed. There was old tuberculous mischief at the right apex of the lungs, and the bronchial glands were enlarged.

Case VII., I. W. had cervical caries. I examined the eyes on April 24, 1890, and found the following: In the right fundus situate below and to the temporal side of the yellow spot, was a tubercle somewhat smaller than the optic disc, *vide* Fig. 6. It was fawn-colored, and its margin was fairly defined from the surrounding retinal pigment. Midway between the centre and the circumference of this tubercle was an irregular, narrow ring of pigment granules. Two small vessels crossed the face of the tubercle quite undisturbed. The edge of the optic disc was a trifle hazy, but there was no blending of vessels. In the left eye the upper segment of the optic disc was a trifle hazy, but the rest of the margin was quite well defined. The patient went to a convalescent home on August 20th, provided with a special support. He subsequently developed whooping cough, and died of general tuberculosis at the end of April, 1891. By this time the tubercle had increased slightly in size, and there was an ulceration in the pigmentary distribution, on the face of the growth, which was then irregular.

Such then is a description of the intra-ocular appearances occurring in the cases, briefly detailed. For those who require further information I must refer them to the *Illustrated Medical News* and the *British Medical Journal.* In these papers I gave an account of several other cases, drawings of which were not made.

Briefly it may be said that tubercles of the choroid are excessively protean in their characteristics, and that no single description will suffice for their portrayal.

They present all shades of coloration from paper whiteness to gray and yellowish white; or yellowish gray to yellowish brown or fawn-colored; or different colored areas of white or gray or yellow may be detected in them. Sometimes a shimmering white central spot is seen. In shape they may appear circular, oval, reniform, triangular or quadrangular. They may be clearly cut, or show a more or less steamy edge from œdema of the choroid or retina. The retinal vessels that cross them or are in their immediate neighborhood may be clearly cut,or show slight blurring from retinal œdema. Choroidal tubercles may have no pigmentary margin other than the natural retinal pigment, or this may be a marked feature. Again, the margin may be shaded off by a pigmentary bloom, as it were, an intensification of the normal retinal pigment with a moth-eaten edge.

Pigmentary disturbance may be noticed on their surface, and this may assume a regular figure, such as a circle, or it may be dotted, or show other irregular design, or a central black spot, which may be mossy-looking. They may be obviously raised, or this may be very difficult to determine by the parallactic test or otherwise, when the patient will permit a critical examination, which is but seldom, a drawback well known to the clinician accustomed to make ophthalmoscopical examinations in such cases. Tubercles are not necessarily situated in the neighborhood of the optic disc, indeed they may be detected in the periphery of the fundus.

From choroidal atrophy, their frequent proximity to the optic disc, and the fact that they are slightly raised, taken together with their paucity, ought to be sufficient distinction. The small yellowish-brown colored patches, with or without a pigmentary margin, so often seen in choroiditis, are not at all unlike the fawn-colored tubercles, in fact bear a very close resemblance to them. But single atrophic patches may simulate the disease. It was so in a boy, M. G., æt. six years, who was brought for a bad headache and vomiting in November, 1889. An ophthalmoscopical examination was made. At the lower segment of one optic disc was a small arc-shaped patch of paper whiteness, with a darkly pigmented border at its base towards the disc. Below, the pigmented border was less obvious, and was of a fawn-pink color, and much less definitely marked off from the surrounding healthy area. I find by my notes that I was in doubt as to the texture of this body. Was it choroidal atrophy or tubercle? It was not raised, and the vessels crossing it were quite unaltered. I could not detect any physical signs. He was sent into hospital because he was said to be drowsy and delirious. He was discharged on December 2nd. The condition of the eye remained unchanged. He still complained of headache and sickness in February, 1890. In April there is an account of three "epileptic" fits and complaints of headache. In May a slight squint, at times, was noticed in the right eye. Still headache, sickness, flushings of the face, and wasting. No change in the fundus oculi. Seeing, however, the history of the child and the possibility of meningitis I sent him to Mr. W. A. Brailey with the notes of his case. Sometimes cases of meningitis are long delayed. Thus I remember a child who had a slow pulse with occasional nausea, nothing more. On making an ophthalmoscopical examination I found he had optic neuritis, which placed a different complexion on the case. These symptoms continued for three months before definite meningitis occurred, which then proved quickly fatal. The tubercular mischief was of long standing, as judged by the size of the tuberculous growths, which were large.

Mr. Brailey replied as follows: "Seeing it now I should not like to have said it was tubercle, or that it ever had been, though of course that is very possible. It strikes me that had I known nothing of the history, I should have called it a congenital total atrophic patch in the choroid. The position and appearances are rare and curious."

In October, 1890, I find by my notes the maternal great-grandfather died in an asylum. A brother had chorea, and another night terrors. He is described at this time as very passionate, spiteful, forgetful, and sometimes sulky, and has sometimes two fits a day. He complains of sickness, then lies down and blanches, and the limbs twitch, but he does not bite his tongue. He is sleepy after the fits. At other times he sits still; suddenly during play, or when being spoken to, loses himself for a minute or so, and then goes on as if nothing had happened. Night terrors, headache, grasp of both hands feeble, especially the left, and he does not use the two first phalanges of the forefinger, if he can avoid it, substituting the second finger instead. If made to use the first finger, he is clumsy with it. He pulls with the two fingers on either hand with almost equal force. The last note I have of him was in April, 1890, and he was about the same. To distinguish between choroidal and retinal pigmentary disturbance confined to the deeper layer is of course quite impossible. Where tubercles assume the appearance of localized patches of choroiditis, the absence of inflammatory symptoms in the eye, and their often close proximity to the optic disc will serve to distinguish them, and the same may be said when the overlying retina is œdematous and it is impossible to detect the underlying choroidal mischief.

Recently I have not encountered so many tubercles in the choroid, in fact I can only remember three cases, two of which occurred in hospital practice. This is possibly owing to the fact that my attention has been more directed along other lines, whereas previously my researches had been concentrated on the discovery of these bodies.

I give the following case *in extenso* because it is so instructive and shows the great importance of making a careful routine examination of the eyes in all cases where there is an element of doubt, indeed I had almost said in *all* cases. The importance of the use of the ophthalmoscope to the Pediatrist cannot be over-estimated, and it will often afford invaluable assistance which will well repay the extra trouble involved.

Were space and time not an element to be reckoned with I could give various illustrations, in addition to those detailed, of the soundness of this advice, instances where had it not been for the ophthalmoscope I could not possibly have formed a reliable opinion.

On April 4th, 1893, I was called into consultation by Dr. Frederick Nicholls of Corydon to see Walter S., æt. eight years. Two years previously I had seen with Dr. Nicholls a sister of his, æt. ten years, suffering from abdominal tuberculosis, from which she died. The parents feared that this child too might be tuberculous. He had been attended by Dr. Nicholls since February 16th with gastric disturbance. From February 28th to April 4th his temperature had been irregular, never above 102.4° F., and at times the morning rises were in excess of the evening, but not invariably. When I saw him he was in his bed, and was dull and apathetic. The only abnormality that I could detect, apart from extra-puerile breath sounds, was an enlarged mesenteric gland, the size of the top of one's thumb, to the left of and slightly above the umbilicus. An ophthalmoscopic examination was then made, and revealed the following abnormalities: Left eye. Indirect examination. Optic disc normal. When the child looks to the right a round fawn-colored tubercle, of the apparent diameter of No. 1 shot, is seen close to a retinal vein, and passing across its surface is a tiny offshoot from the vein.

Right eye. Indirect examination. Optic disc normal. When the child looks down three similar fawn-colored tubercles in the choroid are noticed. On the ocular examination I gave an unfavorable prognosis, and verified the parents' suspicion as to the tuberculous nature of the disease. He died a few days after my visit.

Intubation in Germany.—The Children's Hospital at Leipsic is the only one in Germany where intubation is regularly employed. Baginski formally used it, but now prefers tracheotomy in most cases. The results at Leipsic are very good, over two hundred intubations having been made in the last two years with thirty-two per cent. recoveries. Carstens has modified the O'Dwyer tube a little and inserts it while the child is lying on its back in bed instead of setting in the upright posture. The presence of a tube in the larynx usually renders the swallowing of liquids difficult, and thus the taking of the necessary amount of food is apt to be interfered with. This difficulty is met in America by the giving of solid foods, or by placing a patient upon the back with the head lower than the rest of the body while swallowing. In Leipsic, however, all intubated patients are fed through the catheter so that there is no diminution in the amount of food given. The tube is worn from two to five days. If left longer than this is apt to cause ulceration. If, at the end of five days, relief of stenosis is still called for, tracheotomy is performed. This has been necessary but twelve times in two years.—(*Johnston in Physician & Surgeon*, Detroit, 1894, xvi., 411.)

Tuberculous Milk.—Some recent work has been done in Switzerland to determine the danger from the use of butter made from tuberculous milk. Guinea pigs have been inoculated with butter obtained from the general market and it was found that about ten per cent. of the butter contained tubercle bacilli.—(*Food*, 1894, v., 180.)

SOME PHYSIOLOGICAL FACTORS OF THE NEUROSES OF CHILDHOOD.

BY B. K. RACHFORD, M.D.

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I.

Normal Functions of Nerve Cells.

The term "Neuroses of Childhood" is here used to cover all local and general nervous disorders which do not depend on known local pathological lesions of the nervous system, this definition of the term neuroses does not imply that these diseases have an entirely unknown pathology, but only that they can not be morphologically classified. In these diseases we know more of the symptoms than we do of the lesions, more of the effect than we do of the cause, more about the disordered functions of nerve cells than we do of the widely varying pathological conditions which produce these disordered functions, and this is the reason why these diseases are incorrectly called functional nervous diseases.

The first requisite to the study of the abnormal functions of nerve cells should be a knowledge of the normal functions of nerve cells. For this reason the following preliminary physiological outline is introduced.

Nerve cells have three important functions, viz.: to generate, to discharge and to inhibit energy.

The Highest Function of the Nerve Cell is to Generate Energy. By this it is meant that the cell transforms and appropriates existing energy. The amount of existing energy is constant, the cell does not and can not originate energy, but in the chemical metabolism necessary to the life of the cell force is developed which is transformed into that form of nerve energy which is the special function of the individual cell (Prof. J. Gad—personal communication), and this nerve energy is stored up to be discharged in the exercise of the cell's peculiar function. From this it would follow that the generation of nerve force would be directly dependent on the healthful chemical metabolism of the nerve cell, but it does not follow that the *amount* of energy thus developed would always be commensurable with the physical waste or the chemical metabolism going on in the cell. This disproportion between cell activity and the amount of force developed is especially noticeable in *the immature nerve cells of the child.* A most marked example of the slight amount of energy developed by the cell activity of immature cells may be noted in cortical cells of the brain of the infant, and the brain of the unintelligent adult. In such brains the cortical cells concerned in the development of mental energy have going on within them an active chemical metabolism with the development of very little mental energy, and this failure of chemical metabolism to develop commensurate mental energy is due to the incomplete functional development of these cells. Of all the cells in the body the cell that develops mental energy is the slowest in reaching the degree of functional perfection for which it is destined, and it only does so after a judicious training in the exercise of its peculiar function throughout a long period of about twenty-three years.

The functional development of the motor cell is much more rapid, and the disproportion between the amount of cell activity and force produced is not so great as in the mental cell, but nevertheless it may be stated as a fact true for all nerve cells that the amount of energy which a cell is capable of generating will depend on the degree of functional development which the cell has attained. But these facts concerning the difference in the amount of cell energy developed by different cells under the same conditions do not in any way modify the force of the statement made above that nerve energy is directly dependent on the chemical metabolism of the nerve cell. It will therefore be permissible for us to say that other conditions being the same, *the amount of energy developed by a nerve cell will directly depend on the amount of healthful chemi-*

cal metabolism going on within it. This point in the physiology of the development of cell energy is very important, since upon it rests the conclusion that insufficient nourishment will diminish the capacity of the nerve cell for the generation of energy. The maximum amount of energy will therefore be found stored in the well nourished cell, and the minimum amount of energy in the starved cell. We will see later that this statement which has important clinical bearing can be strongly supported by experimental evidence.

Discharge of nervous energy is a function of the nerve cell only second in importance to the generation of energy. The more or less constant discharge of force is an automatic function of the nerve cell, and this unconscious discharge of nerve impulse is the regulating function that controls the whole body mechanism. As an example of this automatic discharge of nerve force one may cite the influence of the central nervous system over involuntary muscular tissue, whereby the "muscular tone" of involuntary muscles is maintained, the vasomotor centre in the medulla oblongata has such an influence on the muscular coats of blood vessels as to keep them in a state of normal contraction best adapted for the purposes which they serve, this vascular tone remains much the same at all times except when the functions of the centre are perverted by some change in the metabolism of the cells or by influences acting on the centre either directly or in a reflex manner. But possibly of even greater importance to us in this study is the tonic influence of the spinal motor cells on the sphincter muscles of the stomach, the anus, and the bladder, all of which are dependent on the spinal cord for their normal muscular tone. The "muscular tone" of these sphincter muscles is easily disturbed by reflex stimulation, producing on the one hand spasmodic stricture and on the other incontinence. The muscular tone of the skeletal muscles is likewise said to be maintained by an automatic discharge of nerve force, and a perversion of this function may in the same manner produce complete relaxation or irregular spasmodic contraction of these muscles. These examples on the part of the muscles are sufficient to illustrate how nerve cells, by the automatic discharge of nerve force regulate the whole body mechanism. It would be of no value for us to discuss whether this more or less constant discharge of nerve force is purely an automatic function of the cell or whether it is due to unconscious afferent impulses producing a reflex discharge of force. It is sufficient for us to know that these phenomena exist and it is a matter of words whether we speak of them as automatic or as reflex.

Nerve force may also be discharged *voluntarily*. This power of willing the discharge of nerve impulses resides in the cortical cells of the cerebrum. The influence of the will over the discharge of force by the spinal motor cells is a physiological fact of great clinical importance in the study of the neuroses of childhood. Thirdly and lastly and most important of all, so far as our present study is concerned, *nerve force may be discharged reflexly;* this reflex discharge of force occurs when nerve cells are acted on by outside stimuli. If the stimulus be mild the reflex discharge of energy from the normal motor cells of the cord occurs only through the paths of least resistance, viz.: the efferent nerves in the same plane and on the same side as the nerve fibre that carried the afferent stimulus, but if the stimulus be more severe the reflex discharge of force will also occur in the same plane but on both sides of the cord. We will see later how these simple laws of reflex action have little control over the reflex discharge of nerve force under certain pathological conditions.

Inhibition of nervous energy is the third important function of the nerve cell. Certain cells throughout the central nervous system have the power of inhibiting energy discharged by other cells and it is also possible that some cells of high functional development may have the power of inhibiting their own energy. But however this may be it is a well established fact that inhibition does exist and that this power of inhibiting nervous energy may be either voluntary or involuntary. Voluntary inhibition of mental and motor force is a function peculiar to the cells of the cerebral cortex, but involuntary inhibition of nerve force is a function of cells everywhere distributed throughout the central nervous system, but the higher centres are always the predominating centres when the nervous system is intact. The spinal cord contains cells or collections of cells (centres), which are capable of being excited reflexly so as to give motor expression to sensory stimulants, and inhibition can best be understood by studying the inhibitory influence of the higher centres on spinal reflex acts. The spinal reflex centres can act quite independently of higher centres. Gad demonstrated that after section of the spinal cord at any point, the centres below the section are still active and capable of translating sensory impressions into motor acts. But this absolute autonomy of the spinal reflex centres does not exist when the spinal cord is in normal communication with the brain, then the reflex centres in the cord are more or less under control of other centres higher up in the cord, the medulla oblongata and the brain. These centres may influence the lower spinal centres not only in causing them to discharge force as we have above noted but also in inhibiting their reflex acts which are discharged from any cause whatsoever. Some of the inhibitory influences coming from the brain are voluntary and probably originate in the cells of the cerebral cortex, for example we can by voluntary inhibition control the urinary bladder reflexes and prevent urination even when the micturition centre in the lumbar cord is strongly stimulated, and again there are spinal reflexes over which voluntary inhibition has no control, as for example, erection, ejaculation, and movements of the iris.

Of even more importance to us in the study of the neuroses of childhood are the involuntary inhibitory centres which are distributed throughout the central nervous system. They are found in the brain, the medulla oblongata, and the spinal cord, and without voluntary effort or apparent reflex stimulation these centres seem to exert a constant inhibitory influence on the lower spinal centres.

Setchenow's inhibitory centre in the medulla oblongata is an example of similar centres which we have reason to believe, exist in the large ganglia, at the base of the brain. The inhibitory influence of this centre on spinal reflex acts has been quite satisfactorily demonstrated. It is also easy to demonstrate in a brainless frog that stimulation of the sciatic nerve will inhibit spinal reflex acts. It is clear therefore that spinal inhibition may be brought about by other impulses than those that come from predominating centres in the brain and medulla oblongata, that is to say by impulses which are not in themselves of a specific inhibitory nature, but originate in the peripheral stimulation of sensory nerves. But it is not necessary for me to narrate experiments bearing on the subject of inhibition of nerve force, for such experiments are so satisfactorily detailed in the physiologies that I need here only say that experimental physiology teaches us to believe that there are cells everywhere distributed throughout the central nervous system, which have the power of inhibiting nervous energy. It matters little to us in the present study, whether this inhibition is always the special function of certain cells or whether it may also be the function of the nucleus of the cell that discharges the energy ; but, it is important for us to know that inhibition exists both for mental and motor acts, and we will see later why a clear understanding of the influences that control and disturb inhibition is of the utmost importance to us in the study of the neuroses of childhood. If kept in mind, the above outline of the normal functions of the mature nerve cell will materially assist in the study of the functional peculiarities that are manifested by the immature cells of the rapidly developing nervous system of the child.

(To be continued.)

Tuberculosis.—The Toronto courts have decided in favor of the Health Officer who secured the dismissal from school of a child suffering from phthisis, on the ground that it was a contagious disease.—(*Food*, 1894, v., 179.)

AN EXPLANATION OF THE GREAT FREQUENCY OF RICKETS AMONG NEAPOLITAN CHILDREN IN AMERICAN CITIES.*

BY IRVING M. SNOW, M.D.,

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All American physicians who are active in hospital or dispensary life have noticed the great frequency of rickets among Italian patients. A very large proportion of the children of this nationality present well-marked symptoms of rachitis. Indeed, the most severe cases of rachitic deformity seen in orthopedic practice are from Southern Italy. This peculiarity of Italian children is all the more interesting because the disease was, until recently, only occasionally seen in this country, and is still rare among Anglo-Americans. In the monotony of digestive and respiratory disorders of a children's clinic it is safe to predict that in nearly three-fourths of the Italian children the disorder for which they are brought will be associated with rickets, and that this is the only pathological difference between them and the rest of the community.

The study of the process of acclimatization of the various nations of northern and southern Europe that enter into the composition of our cosmopolitan population is as yet incomplete. Nevertheless, it is certain that any race not inured to our bleak northern climate must not only change its dress and regimen of life, but undergo a kind of cellular transformation in order to be in harmony with its environments and to preserve a vigorous physique in the second and third generations. Adults may endure extreme heat or cold, and be transplanted either to the tropics or the Polar Seas without harm, but this is not true of the children of the first generation, who endure very badly any marked change in the air to which their ancestors have for centuries been accustomed. History records many instances of the physical decadence of northern people who have migrated to semi-tropical regions.

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*Read before the American Pediatric Society at its Sixth Annual Meeting, May 30th, 1894.

Rachitis must be regarded as a serious condition in a child, as a constitutional deterioration, localized in the skeleton, muscles, nervous and digestive systems. A rachitic child has a lessened resistance to all of the acute infectious diseases, especially those involving the respiratory tract. If rickets be increasingly prevalent among our city poor, and if it shows itself in its most serious phases in any one particular class or nationality, the fact is worthy of earnest scrutiny and investigation.

In the study of rachitis among Italian children in American cities, it is, of course, necessary to determine (1) the proportion ot rachitic children among Italians; and (2) the proportion of rachitic children among other nationalities. Lastly, if rachitis be most frequent among Italians, the various supposed causes of the disease should be analyzed, to discover what especial factor, as diet, climate or habit of life, is chiefly in operation to produce this constitutional dyscrasia.

The object of this article, after indicating the degree of the prevalence of rickets among the various races of our population, is to show that the true reason for the very frequent development of the disease in Italians is found in the fact that it is the effect of our cold, damp, northern climate upon the offspring of a race that has lived for many hundred years in the warm, dry, sunny air of Naples and of Sicily. It is the physical deterioration of a southern race in a northern climate. I hope to be able to prove that the usual causes of rickets—city life, improper feeding, acute or chronic digestive disorders, bad air, crowding in dwellings, uncleanliness, infectious disease—which produce rachitis in a moderate percentage of the children of the northern races, act with far greater frequency and virulence upon the first generation of Neapolitans born in America.

To ascertain the exact ratio of rachitic children among Italians and other nationalities, I shall present the statistics of my dispensary service for a year.

Total number of children under three years, 200; Italians, 108; other nationalities, 92. Of the Italians, 76, or 70 per cent., were rachitic. Of mixed nationalities, 11, or 12 per cent., were rachitic.

The parentage of the latter class was Scotch 1, American 1, Jewish 1, German 2, Irish 2, Polish 3, not noted 1. Nearly all of the children were born in this country, but were chiefly of foreign extraction. My diagnosis of rickets was made after a careful examination of each child, and was based on well-marked beading of the costo-chondral articulations, craniotabes, etc. Characteristic transverse constrictions of the thorax were invariably more pronounced among the Italians—all of the cases of craniotabes and genu valgum or varum were among them. Whole families of children, as seen in successive years, were affected, so that rachitis was not only more frequent, but also more severe among Italians.

Of the seventy-six rachitic Italian children all had the classic rosary, and most of them were fat; many of them showed extreme muscular weakness, and were late in holding themselves erect and in walking; eighteen had transverse constriction of the thorax, with extreme narrowing and deformity of the chest; four had craniotabes, one with hydrocephalus; six had genu valgum; eight extreme muscular weakness; three enlarged spleen; two enlarged liver.

I was unable to discover that rickets in the Italians had any effect in delaying dentition. Most of the Neapolitan babies developed their teeth early, and without disturbance.

Eleven children, not Italian, all had the rachitic rosary; two had transverse constriction of the thorax. There was no craniotabes or pronounced limb-deformity among them.

The proportion of rickets among children of other races, 12 per cent., is small, and is probably insignificant as compared with that found in the densely populated cities of the Atlantic coast. In Buffalo the tenement-house class is relatively small; the houses are nearly all detached; and very little real destitution exists, even among recent emigrants.

Parry, in 1878, found 28 per cent. of all children brought to the Philadelphia Hospital to be rachitic; 20 per cent. of the children coming to autopsy in the New York Foundling Asylum showed rachitic changes in the bones.

Having demonstrated something of the prevalence of rickets in Buffalo, 70 per cent. of Italian and 12 per cent. of the children of other nationalities, we may next inquire more precisely into the antecedents, environments and mode of life of the Italians in their original home. Nearly all of the Italians in Buffalo emigrated from the country districts about Naples, the modern Italian province of Campania; a very few came from Sicily. None, to my knowledge, came from the cities of Naples or Palermo, and none from Central or Northern Italy. It is, therefore, understood that the Italians alluded to in the paper are Neapolitans. Further, the Neapolitans differ as widely from the Tuscans or Piedmontese in temperament, mode of life, and in climatic surroundings as do the citizens of Boston, Mass., from those of Charleston, S. C. The climate of Turin, in Piedmont, is sub-Alpine, and in the winter months is colder than that of Copenhagen.

We may now raise the question as to whether the frequency of rickets in Neapolitans is not merely a racial peculiarity, a phase of the southern Italian constitution in infancy. Upon this point I shall quote from Hirsch's *Historical Geographical Pathology*. In this work it is declared "that rickets exists everywhere, although most common in Europe and North America, in the temperate zone; that a cold, damp climate, subject to frequent changes, is favorable for its development, as is shown by its existence in endemic form in England, Holland, France, Germany, Austria, and Northern Italy."

Rickets is extremely rare, except in a few great cities, in Southern Italy, Spain, Greece, Egypt, Syria, and among the half-starved vegetarian people of Hindostan, China, and Japan. Rachitis is rare at high altitudes and in the extreme north, and is found in endemic form in large cities. Its absence in tropical and semitropical regions is contrasted with the great infant morality from all kinds of diarrheal diseases in these climates. Hence, as rickets is rare in the districts of southern Italy, whence my patients are drawn, and is present in 70 per cent. of the first generation of Neapolitans born in this country, being nearly six times as frequent among them as among Anglo-Americans, Irish, Germans, Poles, and Canadians, some especial cause must exist to produce this grave deterioration in physique and to intensify the so-called blood-irritant or other cause of the disease. I shall enumerate the various factors that may play a rôle in the etiology of rachitis, to discover if the endemic character of the disease among Neapolitans in North American cities be the result of any one cause.

According to Cheadle, any injurious influence operating in not too sudden a manner on an infant may produce rachitis. The Italian colony in Buffalo (including between 4000 and 5000 persons) lives near the harbor, on damp ground, in old two-storied and three-storied tenement-houses and frame cottages abandoned by the Irish. Nevertheless, the population in this neighborhood does not exceed 100 to the acre, as in the vicinity there are large open spaces, wide streets and railroad-yards. The parents are strong, healthy, young people. The women are well-shaped and have easy labors. I can find no ground for believing that there is any hereditary weakness of constitution or tendency to rachitis. All of the adults appear well nourished. The fare includes soups, meat, bread, cheese, and vegetables, and is as plentiful, if not as expensive, as the food of the average American laborer.

Crowding in dwellings is more common among the Italians than among the rest of the community. A family of five or six usually occupies two rooms, the cooking and eating being done in one room and the other being used for sleeping. It goes without saying that from our standard of living their dwellings are dirty, overcrowded, and poorly ventilated.

The babies of the family are housed for a large part of the year in cold or rainy weather, and must continually breathe a polluted atmosphere, a circumstance that undoubtedly would depress an infant's health. This point will be discussed later in connection with climate. If overcrowding in sleeping-rooms and lack of fresh air were the sole cause of rachitis, it would be nearly universal among all recent emigrants from Ireland, Poland, and among the lower class of Hebrews, as well as among Neapolitans.

Most of the Italians say that they are better fed and clothed in America, and that their sleeping-rooms are not as crowded as the small, smoke-filled hovels inhabited by the laboring-class in Naples, and are better ventilated.

Concerning the hygiene of the skin, the Italian babies were never as clean or as well cared for as the average American, Irish, or German. However, to say that they were, as a class, filthy would be untrue. They were warmly clad in winter, being usually swathed in a long, thick roll of woollen cloth.

Artificial diet, the feeding of infants with cows' milk, condensed milk, starchy or dextrin food, with an excess of carbo-hydrates and a deficiency in fats, has been rightly held to be a frequent cause of rickets; yet most of the Italian children received the ideal infant food, breast-milk.

Analysis of food of Italian children under one year. Total number, 59.

Rachitic, 36: suckled, 21; suckled and fed, 8; artificially fed, 7. Not rachitic, 23: suckled, 17; artificially fed, 6.

Prolonged nursing cannot properly be held to be a cause of rickets, as in Japan, where children are suckled for two or three years, rickets is scarcely ever seen. A small proportion of the Italian women nursed their children for from fifteen to eighteen months. It was common to see rickets in children whose digestion was apparently good and who received no other food than breast-milk. Nearly all of the artificially-fed babies received some breast-milk up to the age of twelve months, the milk being supplemented by soups, condensed or cow's milk or gruel. The quality of the breast-milk of the Italian women may be questioned, as it was not analyzed; yet the evidences of poor milk, deficiency in fats, and excess of albuminoids, were not shown by any usual symptom, stationary or diminishing weight, or habitual vomiting. On the whole, the rules of a proper infant-dietary were no more frequently violated among the Italians than among other races; indeed, the Italian babies were more frequently breast-fed than the remainder of the dispensary patients.

Influence of Intercurrent Diseases.—As a child is seldom brought to a medical clinic for rickets itself, I will state the various conditions for which the Italian children were treated. Total, 76.

1 pneumonia; 21 diarrhea; 5 dyspepsia; 3 meningitis; 9 bronchitis; 12 whooping-cough; 1 congenital heart-disease; 3 tonsilitis; 1 typhoid fever; 1 hydrocephalus; 1 Pott's disease; 2 syphilis; 6 extreme muscular weakness; 2 otorrhea; 1 eye-trouble; 1 injured spine; 4 not recorded; 1 cerebral monoplegia; 1 limb-deformity.

Pulmonary diseases, bronchitis and broncho-pneumonia, complicating measles and whooping-cough, as seen in the dwellings of the Italians, were frequent and fatal among them; yet the large mortality from respiratory diseases among these children might properly be regarded as due to the weak respiratory muscles and the soft ribs of rachitis.

Digestive disorders, chronic vomiting, and acute or chronic diarrhea were no more severe or more frequent among Italians than among other patients. It is nevertheless true that any digestive trouble is more prolonged in a rachitic baby and yields less readily to treatment than in a previously healthy child. I was unable to observe that the digestive disorders of these rachitic babies were other than intercurrent affections. The rachitic children were usually brought for some acute malady of a few days' or weeks' duration, and it was evident that the constitutional disease had developed slowly and without marked symptoms.

When all these causes of rachitis are reviewed it is certain that enough are in operation to produce the disease in a moderate proportion of Italian children as well as in those of other nationalities. The conditions are insufficient to account for the fact that rachitis is nearly six times as prevalent in Italians as in other classes of the community, and is present in 70 per cent. of a race with whom the disease is rare in the mother country.

I have not yet discussed the influence of climate in the etiology of rachitis, and this Theobald Palm regards as the chief cause. Virtually all of my patients were born and lived in the same climate. The disease is rarest among Anglo-Americans who have lived in the country for generations. It prevails to a moderate extent among the children of English, Irish, Germans, and Poles. These races are inured to the cold, changeable atmosphere of Northern Europe. It is far different, however, with the Southern Italian, who has lived for many centuries under the clear skies and in the warm sunshine of Naples and Sicily. In these fortunate regions men, women, children, and babies are out of doors most of the year.

Besides the differences in climate between Buffalo and Naples, which are very great, the Italian babies in our American cities are housed for a large portion of the year on account of inclement weather, and breathe damp, foul air, which is always too cold or too hot. If there be any law of heredity, a race whose vitality and nutrition are accustomed to a semi-tropical climate and pure warm air cannot thrive amid such surroundings. The change is too sudden and acute, both in temperature and in atmosphere.

What are the differences in climate between Naples and Buffalo? I have constructed a chart indicating, in rather a schematic way, the temperatures and rainfall of the two cities, whose climate is a fair index for the surrounding districts.

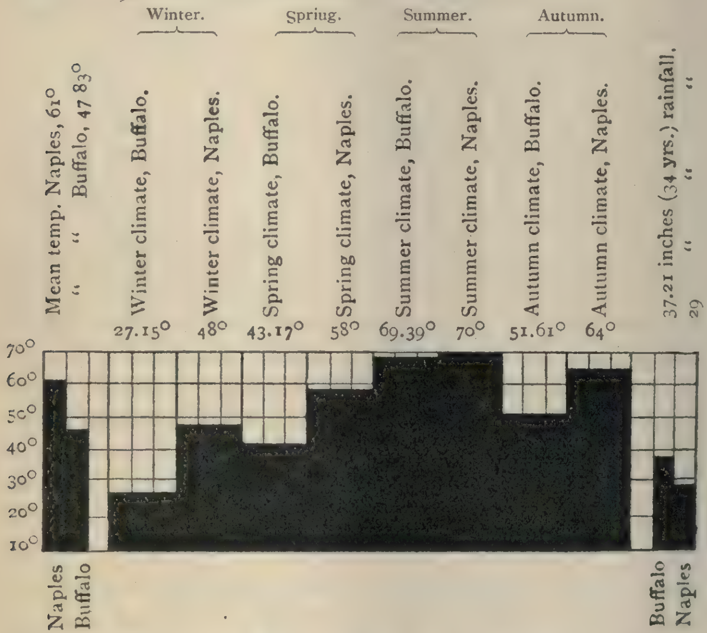
CLIMATOLOGY OF NAPLES AND BUFFALO CONTRASTED,

Naples: Dry and warm in winter; mild, with occasional rainy days in November and latter part of January and in February. Summer atmosphere tempered by sea-breezes.

Buffalo: Climate tonic and bracing; changeable and uncertain at all times.

	Rainy.	Cloudy.	Fine.
Naples	100	120	145 days.
Buffalo	289		76 "

Temperature—(of Buffalo, average 18 years; of Naples, 20 years):



The situation of Buffalo, in 42° 53' northern latitude, on Lake Erie, exposes it to bleak winds in the autumn, winter, and spring; the annual rainfall is 37.21 inches, 8.21 inches greater than that of Naples, which is situated in 40° 52' northern latitude. In Buffalo variations in temperature are very great and very sudden. The mean temperature for a year in Naples is 61°; in Buffalo 47.83°—that is, 13.17° lower than in the Italian city. The winter temperature of Naples is 48°, that of Buffalo 27.15°; the American city is thus 21.85° colder. The mean temperature in spring in Naples is 58°, in Buffalo 43.17°°; Buffalo has the colder temperature by 14.83°. In summer, curiously enough, the mean temperature of both cities is nearly the same, about 70°. The autumnal difference is 12.39°, Naples having a mean temperature of 64°, Buffalo, 51.61°, Between the winter and summer climate of Naples the variation of temperature is 22°, of Buffalo 42.24°. Again, Buffalo has only 76 clear days in a year compared with Naples, which has 145.

The intrusion of a southern race into a northern climate is an occurrence that has few parallels in history. It is reasonable to suppose that serious changes in physique seen in the first generation would follow a change of residence from an out-of-door life in a semi-tropical country to the gloomy skies and long winters of the North Atlantic and lake cities. In proof, I may point to the rapid deterioration of negroes in cold climates, or to the physical decay of the Anglo-Saxon race in India or in the hot climate of North and South America.

Whatever may be the disadvantages of life in warm climates, whether of crowding in dwellings, bad drainage, water, and food, it is certain that rickets is seldom developed among the natives of Southern Italy, Egypt, and India. The probability is that the misery, ignorance, and neglect of hygiene amid which the children are reared are in some degree offset by the bright, warm sunshine. To secure a perfect development of the young of the human species a large portion of the day should be spent out of doors, and, if possible, in the sun. This cannot be accomplished with the children of the city poor, and it is to this lack of pure air and sunlight that we may attribute the spread of rickets in densely populated urban communities. With the first generation of Neapolitans born in American cities, all of the causes of rickets—improper food, bad air, depression caused by infantile maladies—are intensified and accentuated, and the presence of rachitis in seven-tenths of the Neapolitan babies in Buffalo indicates a constitutional deterioration from a great and sudden change in environment.

In plants and animals, adaptation to a different climate is never effected suddenly—a number of healthy adult individuals are first transplanted to some intermediate station, where they may grow several years. Some of the stock may develop vigorously, some deteriorate. As soon as the stock has been exposed to all the vicissitudes of climate the healthiest individuals may again be moved farther north, the necessary nursery and protection being of course given. Man has certainly greater powers of adaptation to climatic changes than animals or plants; still the history of the early years of a migration to a different climate, conducted even under the hygienic laws of a high civilization, is usually one of suffering and great infant-mortality.

The Teutonic races have always fared best when they have found a climate like that of their original home. Man is best able to maintain his health and multiply when he travels in isothermic lines. Migration either to a warmer or to a colder climate should be conducted slowly, step by step, allowing one or two generations to intervene before the extreme is reached.

In conclusion, I shall quote from Theobald Palm's excellent article in the *Practitioner* on the "Etiology of Rickets." He says: "The effect of light upon the human organism is obviously more complex than its direct chemical action upon the tissue immediately exposed to it. The exhilaration which we experience in bright weather, and the depression caused by dull, gray skies, must have a corresponding physical change in the nutrition or molecular condition of our nervous centers, and these react upon the general nutrition. The continuous withdrawal of a due measure of this normal stimulus to healthy functional activity must produce upon a young, actively-growing organism serious and far-reaching results." He also states that as light is essential to the well-being of the growing organism, the exclusion of light is a condition of development of the same organism in the embryonic stage. He suggests that the deficiency of light and sun after the embryonic stage is past, when nutrition is dependent on chemic changes of light and air, lead in plant and animal to partial continuance of the embryonic state, as seen in man and higher animals, in rickets in the continued growth of embryonic cartilage instead of its conversion into bone.

DISCUSSION ON RICKETS.

Dr. J. P. Crozer Griffith, of Philadelphia, said that the cause of this disease was certainly not fully understood. He had seen a great deal of rickets, yet he could not see that there was any difference in the etiology of his colored and white cases. The colored children who had come under his observation had been just as well cared for and fed as the white children, and it had been a puzzle to him why they should be more rickety than the white. The milk on which they were fed was the same as in the case of the white, *i.e.* cow's milk, for it was, of course, the artificially fed babies who were chiefly the subjects of the disease. It might be, as Dr. Snow had suggested, the transportation of a southern race to a northern climate, and yet it would seem that the colored children in Philadelphia ought to have become acclimatized by this time, so that this did not thoroughly explain it. Nor could he see how it could be explained by the difference in diet or care. The colored children whom he had seen, had usually been well developed, and yet they had been rickety. Indeed, the parents of these children had been better fed and dressed than the white people. It looked to him as though there might be a race peculiarity, apart from any influence of climate.

Dr. Holt said that the most severe cases of rickets coming under observation, at least in New York City, were either among the colored or the Italian children. He was unable to say from the records of his dispensary service how large the proportion was, but it was seldom that either an Italian or a colored child came to the hospital for any serious disease, that it was not found to be rickety, and usually in a marked form. He thought rickets was a vice of nutrition, and one of great complexity. The causes were many and far-reaching, and he was not sure that the primary cause was always the same; although the final cause seemed always to be an absence of or a failure to assimilate certain aliments in the food. The predisposition of the two races seemed unquestioned. He had been led to about the same conclusions as those Dr.

Snow had expressed in his paper. But there were cases which could not be explained by change from a southern to a northern climate. From a slight cause an Italian child would become rickety, while the same cause operating on an American child would have no such result. It was very singular that a disease having such a definite pathological condition should be so obscure in its etiology. In his experience, cranio-tabes had been very rare, and he questioned whether the cases of cranio-tabes were all rickety.

Dr. Fruitnight said that in his experience the largest number of cases of rickets had occurred among the Italians. Among the French there were very few. The next largest number was among the Teutonic race, including the English and Scandinavians; then the Slavonic races came next in order of frequency, more occurring among the Bohemians than among the Russians; last the Celtic race. He had not seen rickets among the Scotch, and it was very infrequent among the Irish. Thus it seemed that the inhabitants of continental Europe were more prone to the disease than the inhabitants of the British Islands. He thought this was due to the sudden transition from the environing conditions under which their ancestors had lived for centuries.

In regard to the relations of tuberculosis and syphilis, Dr. Fruitnight said that he thought that in most of the cases, one or the other of these diatheses was very apt to be present.

He would add a case to the list of congenital cases given by Dr. Townsend—a case shown by Dr. Dessau, of New York. This would make four cases now reported in this country.

Dr. Griffith, replying to a question asked by Dr. Seibert, as to whether cranio-tabes was rare in colored children, said that in his experience cranio-tabes was very rare in any children in this country. He had seen it very frequently in Vienna. He was inclined to agree with those who viewed it as a symptom of congenital syphilis rather than of rickets.

Dr. Seibert said that his experience did not agree with Dr. Griffith's. It would sometimes take two or three minutes to find the soft part in the head, and so it was easily overlooked. Michael Cohn (*Die Patholgie d. Rhachitis*, *Yahrb. f. Kinderheilk.*, January, 1894) had called special attention to this, and since then Dr. Seibert had been astonished to find so many cases of mild cranio-tabes. The spot was sometimes no larger than a five cent piece. It appeared to be one of the first symptoms in many cases of rickets. Since his attention had been called to it, he had found cranio-tabes in by far the majority of cases of rickets. It should be looked for especially if there were any history of eclampsia.

Dr. S. S. Adams said that he had had no practical experience with congenital rickets. In Washington, rickets was such an infrequent disease among white children that it might be considered a thing of the past, so far as clinical record was concerned. This might be accounted for by the fact that the proportion of the white poor was exceedingly small in that city as compared with other cities. As to the etiology of the disease in the colored race, he agreed with Dr. Acker that it was due to improper feeding—more to this than to any congenital condition. The food was either not nutritious, or was of such coarse nature that the child could not assimilate it. The negroes must be educated to properly feed their children, and one of the best ways of teaching the parents was through their children in the public schools. By a system of lectures, like those given by the Sanitary League of Washington, the girls in the seventh and eighth grades would be instructed as to the best methods of feeding children.

Another difficulty was that the physicians did not take sufficient pains to instruct the parents concerning the proper feeding of infants. We must educate the mothers and find a food that is economical and safe. In that way we could eradicate the disease from the whites, and to a slight degree diminish it among the negroes.

Dr. H. Koplik said in regard to rickets in European countries that there was a large number of cases in which the etiology was congenital. The frequency of congenital rickets was especially noticeable in Austria, and more especially in children in foundling asylums. Cranio-tabes was not common, but the rosary of the ribs, and the enlargement of the ends of the long bones were certainly quite common in the newly-born, at least in the foundling asylum at Prague. In this country, he had found mild congenital rickets among the foreign population, or one generation removed. But children of American stock on both sides, their ancestors having been in America for two or three generations, were not commonly rickety.

Dr. F. M. Crandall said that he had begun a study of rickets a year or two ago, and had not yet completed it. So far, his conclusions were similar to those of Dr. Snow. There was a large number of cases among the Italians, and a comparatively smaller number among the negroes. In the Italian quarter he had found many cases which had been nursed by the mothers, with a little artificial food, where there had been no apparent cause for the rickets. They had lived in a very poor way, but yet not materially worse than people in other regions where rickets was uncommon, and the children had been better cared for than those of many other races. The Italian women were good mothers. Environment alone would not account for the frequency of rickets among Italians. There must be some race predisposition besides the transportation to a different climate.

Dr. Stowell cited a case of twins, of Irish parentage, one of whom was large and robust, and the other markedly rickety. It seemed that the large child had gotten most of the mother's milk, and the smaller one had received in consequence an insufficient supply. The deficiency was made up with condensed milk.

Dr. Northrup said that a large number of the nurses who received children from the New York Foundling Asylum were Italian women, and their babies throve and got fat, so that it had become a sort of tradition in the hospital, that if a baby were to be saved, it must be given to an Italian.

Dr. Seibert asked Dr. Fruitnight on what he based his statistics. Did he compare the number of cases per thousand patients, or did he mean simply that because he saw many patients among Italians he saw many cases of rickets among them? On the east side of New York City, nine-tenths of the cases of cranio-tabes were made up of Italians and Russian Hebrews. Fifteen years ago it was the rarest thing in the world to see a well marked cases of rickets. At that time, a laboring man in New York City ate much more meat and nourishing food than now, and hence it was no wonder that rickets had increased. The speaker concluded that improper diet was chiefly responsible for the production of rickets.

Dr. Fruitnight said that he had examined every child coming to him as to rickets, and had found from the whole number the order of racial frequency mentioned above.

Dr. Holt asked how much good had come from drugs, particularly phosphorus in the treatment of rickets. He said his results with phosphorus had been absolutely *nil.* It seemed that it was chiefly a question of diet, and that drugs did not have much influence. He would like to know if other members had had a correspondingly discouraging experience with phosphorus.

Dr. Koplik said that the phosphorus must be nascent. He thought the best formula was that of Kassowitz. It was important that the phosphorus should be given in cod liver oil. Following out this method of treatment he had had some encouragement in the treatment of rickets. Under this treatment, a child, say of two years, previously unable to stand, would improve in a short time so that it would be able to stand. The preparations of phosphorus such as Thompson's Solution and the elixir were undesirable, they are unstable preparations and he had lately endeavored to put the phosphorus in the form of nascent phosphorus by dissolving it in sweet almond oil in a capsule, finally breaking up the capsule in the requisite quantity of cod liver oil. The phosphorus in Kassowitz's formula would keep for some time. Giving phosphorus regardless of the form in which it was administered, was not doing justice to the one who introduced the treatment.

Dr. Seibert said that he had given phosphorus according to Kassowitz's prescription, one-sixth of a grain of phosphorus in three and a half ounces of cod liver oil, giving one teaspoonful of this mixture once in every twenty-four hours. It had not been retained by the stomachs of one-half of the children. He thought that phosphorus was a good thing, if given as a food, and along with other food.

As to salt-water bathing in the treatment of rickets, he said that if a baby needed salt, the best way to administer it was by adding the salt to the food. In salt-water bathing the salt was not absorbed.

Dr. Koplik remarked that Kassowitz, as the result of his investigations, had claimed that it was not the cod liver oil, but the phosphorus which cured the rickets. The cod liver oil is simply a very digestible menstrum for the phosphorus.

Dr. Carr said that the general dietetic and hygienic management of rickets was usually all sufficient without resort to drugs. Thus if the Italian or colored children were properly clothed and fed there would be little occasion for medicinal treatment. The change from the warm climate of Italy to our own colder climate naturally affected the circulation in the skin and mucous membranes, and so predisposed these people to catarrhal troubles. Where the intestine shared in this catarrhal condition, the coating of mucus prevented absorption of the fat, either when taken in the form of food or as medicine. It was evident, therefore, that the problem was not solved by simply administering fat; it was the assimilation of the fat that was at fault. Undoubtedly a deficiency of fat was the primary cause of rickets, but it should not be forgotten that albuminous food was also necessary to the maintenance of the proper standard of health. Thus, he had seen recently a child who had been fed on cream mixture up to the age of nine months, and who presented an extreme degree of muscular weakness as the only evidence of rickets. The administration of beef-juice and the addition of milk to the cream mixture soon brought about a satisfactory change in its condition.

Dr. Acker said that he believed if the negroes were placed amid more favorable surroundings, rickets could be easily cured without any drug treatment. Medicines, however, aided in restoring them to health, and in the Children's Hospital in Washington much benefit had been derived in such cases from the administration of the phosphatic emulsion, make according to a formula devised twenty years ago by Dr. S. C. Busey. It consisted of cod liver oil combined with yolks of eggs, New England rum, dilute phosphoric acid, glycerine, and flavored with oil of bitter almonds and orange water.

Although he had made a study of climate in relation to the etiology of the disease, he had been unable to come to any definite conclusion in regard to it. The negroes in the extreme southern states were just as rickety as those in the New England states. The thorax in the negro was usually narrower than in the white, and this, by interfering with the oxygenation of the blood, might favor the production of rickets. The negro was sensitive to cold air, and was in the habit of covering up his head when sleeping. They differed from the whites anatomically, in the size of the muscles, bones, etc., and also pathologically in their greater susceptibility to certain diseases.

Dr. Snow said that rickets was rarest among vegetarian people as in India and China. Its infrequency in tropical and semi-tropical countries is strangely in contrast with the great infantile mortality from gastro-enteric diseases in these regions. He could not agree with one of the speakers who claimed that the greater prevalence of rickets at the present time was due to the poorer condition of the laboring classes. The condition of the working people, at least, in the City of Buffalo was improving instead of deteriorating. In conclusion, he would say that he was of the opinion that the reason that rickets was five or six times as frequent among the Italians as among other races in the United States was to be found in the great and sudden change in the climatic conditions. He believed that the cure of this very complex condition a proper diet having been secured was to be effected chiefly by keeping those affected with rickets for the most part out of doors in a warm atmosphere. The disease has a strong tendency to spontaneous cure.

Clinical Memoranda.

CASE OF EPILEPSY DUE TO GENITAL IRRITATION AND CURED BY CIRCUMCISION.

BY THOMAS H. BURCHARD, M.D.

New York.

Notwithstanding the carefully recorded cases of Sayre, Otis, Beard and Rockwell, Emmett and others of our city alone, there are many who deny the possibility that morbid conditions of the genito-urinary system can exert any permanent prejudicial influence upon the nervous system. In the following case the relation between the genital irritation and the nervous phenomena is so direct—the nervous manifestations disappearing entirely upon the removal of the irritation—that I cannot see how exception can be taken to its validity.

August 17th, 1876. C. H. H., Jr., aged twelve years, had been delicate since birth, although he had escaped the usual diseases of childhood. At eight years of age, he began to complain of painful micturition, which increased to such severity that he would hold his water for hours, passing it involuntarily during sleep, when he would frequently awake screaming with pain. Between eight and nine he had frequent hysterical attacks of crying during which the muscles of his face first and ultimately those of the body would undergo contraction and irregular spasm. He did not lose consciousness during these attacks.

In the summer of 1874, when ten years of age, he had a distinct epileptiform seizure, remaining unconscious "fully five minutes," having both tonic and clonic spasms. At first these attacks occurred about once a month, later on they increased in frequency and severity. During the past six months they have occurred at intervals of five to seven days, occasionally having two seizures in one day. The patient can generally foretell by a minute or two the onset of an attack, having either a sense of mist rising before the eyes or else a cold sensation running up the *left* leg (never the right.)

He has been under the care of Profs. Metcalf, John J. Crane and Loomis of this city, and Charot and Brown-Sequard in Paris. The diagnosis of epilepsy had been made by all of these gentlemen and at the time I saw him he was taking the bromides in large doses.

Upon examination the boy presented the listless hang-dog expression of the chronic masturbator. He was covered with a profuse bromide eruption and was markedly anæmic and physically weak. He emphatically denied ever having masturbated, and the sensitiveness of the penis was such that even contact with the clothing caused intense pain. His mother said that this had been the case for over a year. Learning of the difficulty in urinating and the frequency with which the epileptic seizures followed it, a careful examination of the genitals was made. The penis was found to be abnormally small, with an elongated, twisted prepuce of over an inch in length. The meatus was badly inflamed and secreted a purulent discharge.

With Dr. Loomis' consent a circumcision was done on August 20th. The entire prepuce was adherent to the glans and had to be dissected away throughout its extent. A crescent of hardened smegma was removed from beneath. The day following the operation the boy had a slight convulsion, accompanied with partial loss of consciousness. This was repeated the second day after. After this his convalescence was rapid. Five months after the operation his father reported that "his condition was excellent and that he never had a return of his convulsions." Last spring Prof. Loomis reiterated this statement. It is now over sixteen years since the performance of the operation.

Physical Culture in Unhealthy Schools.—There are one hundred and eighty sanitarily defective schools in Chicago, and the city spends about $4,000 annually on an athletic overstrain fad called "physical culture," whose chief purpose seems to be to provide "professional foreigners" of the ward-heeler type with an occupation. The money wasted on this "physical culture" humbug could be advantageously employed in remedying the sanitary defects of a few schools.—(*Medical Standard-Record*, 1894, xlvi., 499.)

CROUPOUS PNEUMONIA; MEASLES.

BY SAMUEL S. ADAMS, M.D.

Washington, D. C.

B. J., female, aged ten years, colored, was admitted to the Children's Hospital October 6, 1891.

Previous History.—Family history of phthisis. Has been in delicate health since an attack of *measles* four years ago. For the past two years has had trouble with the right eye and lid.

Present condition.—Poorly nourished. Glands of neck enlarged. Deaf. Cough and a few dry rales, due to catarrh of the naso-pharynx. She was admitted to Dr. Swan M. Burnett's service (Ophthalmic Surgery), and he, subsequently, diagnosticated her ailment tuberculosis of the eyelid. She remained in the hospital and her general condition improved.

December 5, 1892. Patient was transferred to my service to-day for headache, high fever, pains throughout body, slight dry cough, without expectoration, anorexia and lassitude.

Dec. 8th. I saw her this morning. The general symptoms are exaggerated, the cough is more frequent and more painful, and the axillary temperature is 103° F. (See Chart I.)

Physical examination. — Respiration, hurried, interrupted and painful. Slight dulness at base of right lung anteriorly; shallow inspiration and rough expiration; bronchial breathing, with crackling rales, after coughing, at apex.

Left, anteriorly. Vocal fremitus; bronchial breathing; and dulness throughout. Posteriorly normal, when transmitted sounds are excluded. Ordered liquor ammon. acetat. et spts. æther. nitros.

Dec. 9th. Respirations very rapid, 50 per minute. Bronchial breathing, vocal fremitus and dulness over entire left lung, anteriorly and posteriorly. Constant cough, but no expectoration. Dec. 10th. Symptoms exaggerated, otherwise no change. Dec. 11th. Great pain complained of in right side of chest, anteriorly, on inspiration. Sibilant rales.

Dec. 12th. Cough loose and frequent; no expectoration. Right, anteriorly; mainly bronchial, but slight vesicular breathing, especially towards the apex; a few crepitant rales after coughing; and dulness less pronounced. Posteriorly, same as in front. Left, anteriorly, same as on right. Posteriorly same as in front. Much brighter, absence of pain, temperature subnormal, and large and small moist rales over both lungs anteriorly and posteriorly. She steadily improved and the physical signs became normal by December 20th, when she was again transferred to Dr. Burnett's service as cured.

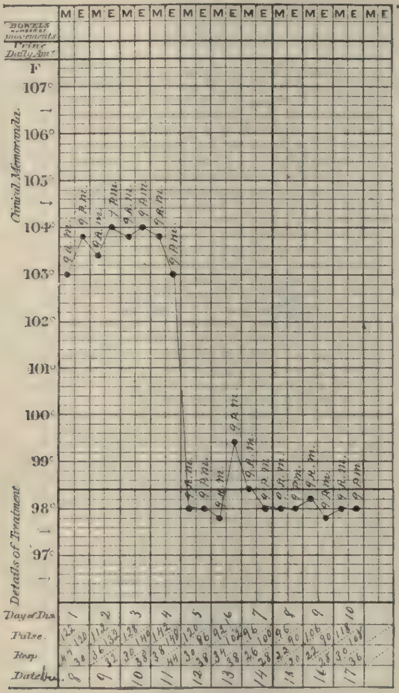


CHART I.

April 1st, 1893, this patient was readmitted to my service for a typical attack of measles—which was then epidemic in the hospital. Rough breathing throughout chest, and fine moist rales over the whole of the right lung, anteriorly and posteriorly. April 2nd. Cough loose and frequent. Complains of intense pain over right lung. Breathing rapid, bronchial and painful. Dulness over right. Broncho-vesicular breathing over left; no dulness. Heart rapid and weak. April 7th.

Very little change was noted in the physical signs until last night when, after a profuse sweat the temperature dropped below normal and convalescence set in and was uninterrupted.

The interesting points in this are that she should have passed through measles and two attacks of pneumonia with comparative safety. This seems the more singular when we recall that her family history showed phthisis and the patient herself had at the time of these attacks tuberculosis of the eyelid. That this affection of the lid was tubercular was confirmed by inoculating rabbits.

Circumcision.—In most cases the foreskin adjusts itself to conditions of perfect cleanliness at the time of puberty, if not before. Physicians are not so senseless as to unnecessarily mutilate themselves and their families. Circumcision is a relic of barbarous and semicivilized times, before soap and water and sanitation had been preached. It no doubt served a useful purpose among the nomadic tribes of tropical countries. But in these days physicians should cease to preach or impose upon their patients an unnecessary and irrational mutilation.

The rite which in these modern times might be substituted for the early religious ceremony of circumcision would, according to some, be resection of the spermatic cord of the vicious and defective classes, so that they should cease to propagate their kind. Spermatorectomy will probably triumph over and replace circumcision, if anything does.—(*Editorial in Med. Rec., N. Y.*, 1894, xlvi., 593.)

An Outrage.—Dr. Pilcher, superintendent of the institution for imbeciles and weak minded children, at Winfield, Kan., has been bitterly denounced by newspapers in Winfield and Topeka, for castrating several boys—inmates—who are confirmed masturbators. His predecessor, Dr. Wile, had treated these boys five years without benefit, and Dr. Pilcher, taking a rational view of the subject, performed the operation for the same reason he would perform any other surgical operation—for its curative effect. There is a strong probability that he will be indicted for mayhem, to the everlasting disgrace of the civilization of the 19th century.—(*Texas Med. Journ.*, 1894, x., 186.)

A CASE OF PHLEGMONOUS INFLAMMATION OF THE SCROTUM AND SUBSEQUENT PERITONITIS.

BY SAMUEL K. BREMNER, M.D.

Resident Physician to the New York Infant Asylum, Mount Vernon, N. Y.

F. M., an inmate of New York Infant Asylum, age eight weeks, is a well nourished child, weighing ten pounds. Breast fed and never ill until present sickness.

No specific, tubercular nor rheumatic history in parents.

April 9th. Child quite restless during the night. At 9 A.M. temperature 105°. Pulse 180. The mother called attention to the condition of the scrotum, noticed early in the morning. There was a swelling the size of a pigeon's egg in right scrotal sac ; the tumor was translucent, not sensitive, apparently a hydrocele. No history of traumatism. General examination gave negative results. Child is restless ; has had two normal movements. P. M. temperature, 103° ; P., 170 ; R., 30. Vomited once ; one movement, yellow. Nursed well ; restless at times. Increase in size of tumor, which is now apparently quite sensitive. April 10th, A. M. Rested well. Temp., 102.6° F. Vomited. One movement, yellow. No change in tumor. P. M., temp , 104.2°, pale, restless, nursed well ; no vomiting. Four movements, green and thin. Urine, q. s. April 11th, A. M. Restless night. No vomiting. Temp., 103 ; P., 180. Tumor is size of hen's egg, tense, very sensitive, not translucent. Aspirated and pus ʒ i withdrawn ; later free incision made and sac drained, about ℥ ss of thick pus being evacuated. P. M., quiet day, nursed well ; temp., 103 ; vomited once, a greenish fluid ; two movements, yellow.

April 12th. Restless during night except when under the influence of morphine. Temp., 102.4° ; P., 180 ; pale, much prostrated, cold extremities, abdomen distended, tympanitic and sensitive, legs drawn up. Frequently vomits green matter. No movement. P. M. temp., 103 ; child in collapse ; has passed no urine during the day. Died during the night.

Autopsy twelve hours after death. Body plump ; heart, lungs, liver, spleen and kidneys are normal. Scrotum—right sac : incision drained cavity. Serous covering of testicle and scrotal wall is considerably thickened, injected, and covered with a thin layer of fibrin. The testicle and epididymis are normal. Inflammation extends up to internal ring, which is normal.

On opening abdomen sero-purulent fluid escapes; it is odorless, is generally distributed throughout cavity; amount is about six ounces.

The intestines are very slightly distended and injected. Recent lymph mats together the dependent coils, especially in the right iliac region. The cœcum and appendix vermiformis are normal. There is no constriction nor invagination of the gut. The mucous membrane of the intestine is normal throughout.

These cases are extremely rare. Cases in female children of extension up the vagina—gonorrhœal infection—and resultant peritonitis, while infrequent, are met with. There was no congenital hydrocele. Nor was any source of infection found in other organs.

Turpentine in Incontinence of Urine.—The unpleasant smell emitted by persons suffering from incontinence of urine can be conveniently covered, according to Dr. Emminghaus by means of ten-drop doses of turpentine administered in milk or water three times a day. This converts the smell of stale urine into an odour resembling that of violets, as is well known to persons who have taken turpentine. The remedy is perfectly harmless in most cases, and has been given by Professor Emminghaus for many weeks at a time without any inconvenience. It is, however, contraindicated in ulcer of the stomach, gastric catarrh, and nephritis, and also in some persons in whom turpentine tends to upset the digestive functions.—(*London Lancet*, 1894, ii., 992.)

Incontinence of Urine.—Dr. White, *La Revue Médicale*, recommends the following formula in incontinence of urine in children:

℞
Benzoate soda }
Salicylate soda } ....*āā*....(grs. xv.) 1.0
Ext. belladonna...............(grs. xxx.) 2.0
Cinnamon water....................(℥ iv.) 120.0

A teaspoonful four or five times a day.—(*Canada Lancet*, 1894, xxvii., 98.)

SCLERODERMA.*

BY I. N. BLOOM, A.B., M.D.

Dermatologist to Louisville City Hospital, Masonic Widow's and Orphan's Home, etc.

It is rather unusual that one man should be able to exhibit three cases of scleroderma before a general medical society inside of two years, yet the case I will show you to-night will be the third that I have brought before you within that time. I may not see another case of this kind in ten years.

This little girl, eight years of age, lives in Campbellsburg, Ky. She is apparently in perfect health, and is unusually bright for her age. She suffers from constipation, requiring the frequent administration of laxatives. Her mother says she is somewhat nervous, but not unusually so. She has had no childhood diseases, and her general health is all that can be desired.

A small white patch was first noticed on the the left shoulder about two years ago ; it was painless and has remained so throughout its course, and has steadily increased to its present size, now measuring about eight inches in length by three and one-half inches in width at its widest point. She has been seen by a number of physicians, I believe I am the fourth ; one gentleman in this city made the diagnosis of psoriasis, another, vitiligo.

I first saw the case five weeks ago. I advised that she be taken back home, and return here again when ready to be placed under treatment. She came back about two weeks ago, and since that time I have treated the case by local applications of chrysorobin ten per cent. in a saturated solution of India rubber and chloroform. This mixture is very hard to remove, and I do not know just how the plaque will look to-night ; I do not know whether the points to which I want to call particular attention will be apparent.

The redness surrounding the patch which you will now observe, is caused entirely by the chrysorobin. This case differs from the one I exhibited to this society a few weeks ago, in that the skin in the other case was not bound down. In the case before us the parchment-like appearance of the plaque is very well-marked, and the skin is firmly bound down to the deeper structures. As I have said before it has steadily increased from a minute patch to its present dimensions. It is white and harsh to the touch, the whiteness resembling scar tissue. One point to which I want to call especial attention, and which I regard as absolutely pathognomonic, is the engorgement of the capillaries at the edges of the plaque. Sometimes this does not exist, but it is well marked in this case. In the first case I presented to this society, this feature was not present, and I called attention to its absence at that time.

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*Reported to the Louisville Clinical Society.

Another feature in the case before us, which can be readily observed by the naked eye, is that immediately at the edge of this plaque extending all the way around it, is an elevated line fully one-tenth of an inch in thickness. You will observe by a close examination that the capillary dilatation is very plain.

The prognosis in these cases in former years was regarded as very grave, but this idea was based upon false premises; we now know better. The development in this case has been quite rapid, and the question will naturally be asked as to how much further it will extend, and what will be the final outcome. Unfortunately these are questions that I cannot answer. As the patient is a girl and the patch already extends from the acromion process of the left shoulder to a point four inches below the angle of the jaw, it is a serious question from an æsthetic point of view. Cases have been known and are reported in which, after ten or fifteen years, life has returned to the affected part, and the skin has become normal. This may be possible, but I have never seen such a case.

In looking up the statistics I find it stated that in ten thousand cases of skin diseases there will be found three of scleroderma, so that as I have exhibited three cases, it would seem that I have had my proportion of ten thousand cases of skin diseases. This statement appears in the statistics of the American Dermatological Socicty for 1894.

As before indicated, scleroderma used to be considered a terrible disease, the prognosis the gravest, but in the light of later facts, when cases are closely watched, the prognosis is not regarded grave at all as to life, but as to recovery not so much can be said; though, as I have stated, many of these cases do recover and cases are reported where ten to fifteen years after such plaques have appeared the skin has returned to normal.

In the treatment of scleroderma all sorts of things are recommended, and in every extensive work on skin diseases you will find a list occupying a page or more covering the various remedies that have been suggested. As I stated at the last meeting of this Society, I do not know just what will do the most good, but in this case I have been using chrysorobin as an oxidizing agent; I do not know why I am using it.

Although there is capillary dilatation all along the edge of this plaque, I shall probably shortly put this patient on arsenic, pushed until its full physiological effects are apparent. I do not pretend to say that the treatment will be effective; I do not know that it would, but the plan I am following I have selected from the various measures that have been proposed.

DISCUSSION.

Dr. J. W. Irwin: Has destruction of the epidermis ever been resorted to for the cure of this condition, and would this method not prevent a return?

Dr. I. N. Bloom: I have never heard of the method suggested by Dr. Irwin being employed. I do not see why taking off the epidermis would prevent the spread of the disease in the first place. It spreads peripherally, of course, and you would have to begin in what appeared to be sound tissue, you would have a larger scar, and you could not be certain that the disease would not extend from the edge of the scar; so by removing the epidermis you would not increase the probability of its not spreading, and you would absolutely prevent the possibility of a scarless structure appearing there later.

Dr. J. W. Irwin: How would it do to remove the entire skin, and produce a new growth of skin by means of grafting? I think this treatment would be especially indicated if the plaque was not very large.

Dr. I. N. Bloom: I believe the last suggestion would be a good one if we could be assured that it would limit the spread of the disease. I have never heard of its having been tried but it appears plausible, and if the space involved in a given case was small I think it would be worth trying.

Dr. J. W. Irwin: I would like to ask Dr. Bloom in what way the chrysorobin acts, or how it is expected to affect such cases.

Dr. I. N. Bloom: In the case shown to-night I have been using chrysorobin for two weeks. It acts as an oxidizing agent, and it is probably by far the best remedy we have in psoriasis, but that as we know is a lesion of an entirely different character. It is perhaps not thoroughly understood just how chrysorobin does act in these cases, but we know that life does return to the atrophied and apparently dead skin; this has been the experience of a large number of practitioners. Perhaps it would be safe to say that the chrysorobin causes a development of the partially atrophied vessels which are not entirely dead, and consequent removal of the dead material, a stimulative regeneration as it were, just as a tree that has become dry will under certain circumstances revive and grow into a blooming tree.

The pathological appearances are those of cell infiltration, primarily in the blood vessels, and later in the glands of the skin and round the fat globules. This causes obstruction of the lymphatic and blood vessels and diminution of their lumen. The hypertrophy of the connective tissue may be the cause of this. The disease is most probably due to some trophic nerve disturbance, of which we now know nothing.

Sterilization of Doctors.—It has been proposed by Gutmann that stations be erected in convenient localities in cities and large towns where physicians may go to be thoroughly disinfected immediately after they have visited a case of infectious disease, and before paying any further visits. The operation will take about fifteen minutes, and then the doctor may go about his business, proud in the consciousness of being clean and no longer a menace to the health of his fellows.—(*Annals Hygiene*, 1894, ix. 626.)

A CASE OF ACUTE SPASTIC ŒSOPHAGITIS.

BY ROSA ENGELMANN, M.D.,

Professor of Pediatrics in the Post-Graduate Medical School; and Fellow of the Chicago Academy of Medicine, Chicago, Ill.

La Grippe is again endemic especially among children of the poorer classes. In its train, come reports of unusual nervous manifestations. In a recent paper,* I noted the coincidence of influenza and wry neck. A little later, a case of acute spastic œsophagitis presented itself for observation. Because of the extreme rarity of this affection, and its probable relation to influenza then prevalent, the following histories are interesting.

Rosa Liebert, Jewess, age twelve years and two months, said her father was subject to convulsive nervous attacks and that he suffered from such a one, and likewise a fever, sore throat and cough upon the day that she became sick.

Sept. 1, 1894, she had a chill, followed by fever, headache, anorexia and constipation. Her head and neck began to feel stiff, uncomfortable and painful upon movement. She swallowed with difficulty.

Sept. 4th, she showed marked anemia and prostration. The pulse rate was 120, the temperature $101^{6}/_{10}$. No respiratory embarrassment, although slight cyanosis existed. Manifest faucial hyperæmia established the infection atrium. There was twitching of the facial muscles, general nervousness and such pronounced dysphagia that she urgently applied for relief. The head was slightly, but rigidly, retracted. The sterno-cleido-mastoids, and all the other postural head muscles were in a state of tonic spasm. The larynx and thyroid gland were dislocated forward to such a degree, that, at first sight, I believed I was dealing with a case of acute enlargement of the thyroid gland. More careful inspection and palpation demonstrated my error. Scarlatinal and diphtheritic angina, as well as post pharyngeal abscess were excluded. The acute onset of the disease and the physical examination, eliminated cervical spinal caries.

An examination of the larynx, courteously made by

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* "The Inter-relation of some of the Local Spasms of Early Life" by Rosa Engelmann, B.A., M.D., Jour. of the Amer. Med. Ass., August 18, 1894.

Dr. George Morgenthau, debarred any affection of that organ. Consequently I made a tentative diagnosis of acute spastic œsophagitis with involvement of contiguous and associated nervous areas.

The use of antispasmodics and sedatives, with complete recovery in four (4) days, confirmed this diagnosis. The seat of the primary infection and the appearance of the same trouble in another member of the family with the prevalence of La Grippe in the neighborhood seems to point to the latter as an etiological factor. Another causative agent was undoubtedly a neurotic inheritance curiously illustrated in her younger sister.

Katie Liebert, age eight years, first came to the clinic August 11th. The ailment was trivial. She was well nourished but anæmic, nervous and excessively hyperæsthetic.

Sept. 19th, she appeared again and was treated for pharyngitis and tracheitis.

Sept. 25th, repetition of the above.

Sept. 30th, the child was alarmed because she was hoarse and almost completely aphonic. On the evening of the 29th, her mother's dress accidently ignited and the child screamed with fright. She slept restlessly and awoke several times crying out.

Dr. Irwin Simpson's laryngoscopic examination gave negative findings. The girl recovered in twenty-four (24) hours.

Tuberculosis in Domestic Pets.—Dr. Foehner, of Berlin, has examined some seventy thousand sick domestic animals in the past seven years, and of this number only two hundred and eighty-one suffered from tuberculosis. The parrots were relatively the most frequently affected, twenty-five per cent. of those coming under his care being tuberculous. Of the cats, only one per cent. showed symptoms of the disease.—(*Med. Rec.*, 1894, xlvi., 559.)

Milk and Disease.—Dr. W. H. Ford, President of the Philadelphia Board of Health says that it is a well-established fact that milk is a common carrier of the seeds of disease. Well authenticated outbreaks of such diseases as scarlet fever, typhoid fever, and diphtheria have been traced to this source. Tuberculosis, that dread enemy of the human race, can be and is communicated by the consumption of milk from tuberculous cows.—(*Dietetic & Hygienic Gaz.*, 1894, x., 538.)

Society Proceedings.

NEW YORK ACADEMY OF MEDICINE,

GENERAL MEETING DEC. 6, 1894.

The Treatment of Diphtheria Including Serum Therapy.—Dr. H. W. Berg read a paper with this title. He divided the subject into (1) the prophylactic treatment; (2) the local treatment; and (3) the constitutional treatment. He said that a bacteriological examination was the most important factor in the prophylaxis of diphtheria, for by it alone could one determine when it was safe for those who had had the disease, or those who had been attending on diphtheria patients to mix with other people. The physician should be especially careful himself lest he carry the contagion to others. To avoid this it was well for him to envelop himself in a gown, or to be careful not to touch any of the infected objects in the sick room without the intervention of a sterilized towel.

Some observers, among whom was Loeffler, believed that local treatment was all-sufficient if begun sufficiently early, and in any case, its efficiency must depend largely upon the position of the diphtheritic membrane. Experiments in the Willard Parker Hospital had shown that the normal salt solution, while not in itself germicidal, was in practice the best for purposes of irrigation in diphtheria, because it could be used very freely without fear of doing harm to the patient, either by causing undue irritation, or by its toxic effects. In performing these irrigations the child should be first wrapped in a sheet to prevent struggling, and then placed on its side in bed or on a table, with a rubber sheet so arranged as to carry off the fluid into a pail. A fountain syringe was convenient for this work, and the irrigation should be given first in one nostril, then in the other, and lastly in the mouth. It was rarely necessary to repeat them oftener than every two or three hours. Where the air passages are obstructed by diphtheritic membrane, our effort should be to diminish tumefaction and destroy the bacilli. Many consider steam inhalations useful for this purpose; they were certainly agreeable to the patients if given quite warm. The author then exhibited a simple little lamp which he had devised for the purpose of subliming calomel. It was to be hung up in the upper part of a tent erected over the child, and about ten grains were to be burned every two or three hours until relief was obtained. These fumigations seemed to act solely through the constitutional effect of the mercury. Salivation was rare in children. Where surgical measures were demanded for the relief of the dyspnoea, both tracheotomy and intubation were useful, each having its own particular sphere. The only difficult part of the after-treatment in intubation cases was the feeding of the children. This was most easily accomplished when the child's head was allowed to hang over the edge of the nurse's lap. He thought the new intubation tubes with the bulbous ends were an improvement on those formerly made. The child should be kept constantly in a steam tent after intubation until the tube was removed.

In considering the constitutional treatment of diphtheria, it should be borne in mind that no attempt should be made to reduce the fever by the administration of antipyretic drugs, as these were all cardiac sedatives. The use of sponge baths and of cold compresses about the neck would answer the purpose much better. No matter how mild the disease the patient should be kept at rest in the recumbent position, and in severe cases should not be allowed to get up for several weeks after the disappearance of the membrane. Strychnine should be given at the very commencement in order that its full effect might be obtained at the time the heart first showed signs of flagging. For a two-year-old child, $^{1}/_{120}$ of a grain may be given every two or three hours in severe cases. The old iron treatment was certainly sufficient for the mild cases of diphtheria, as it exerted a local as well as constitutional effect. For the more severe cases more reliance could be placed in the mercurial treatment, giving to a baby of a year, $^{1}/_{60}$th of a grain every half hour or hour. The bichloride should not be prescribed in a mixture with either iron or syrup. The occurrence of albuminuria or diarrhœa were indications for the suspension of the remedy, or a lessening of the dose.

Regarding the new treatment of diphtheria with antitoxin the speaker said that all observers were agreed that the earlier the stage at which this treatment was begun, the better the chances of success. Aronson had reported a mortality of twelve per cent. under the new serum therapy, where the former death-rate under the usual methods of treatment had been thirty-three per cent. We were not yet in a position to pass judgment on the value of this treatment, but there was certainly a fair prospect of its yielding excellent results.

Dr. Berg then exhibited some lantern views, showing diphtheria bacilli, the proper position of the child during intubation and for after-feeding, and the method of carrying out the irrigation treatment.

Dr. William H. Park said that microscopical examination without any bacteriological test was not sufficient for the proper differentiation of true diphtheria from pseudo-diphtheria. In cases where the membrane was not easy of access, as in diphtheria of the larynx, it was safer to look upon the disease as true diphtheria even if no diphtheria bacilli were found. Personally, he was of the opinion that the use of antiseptic washes, such as bichloride of mercury diminished the danger of the attendants contracting the disease; yet such irrigating solutions must not be very irritating. One objection to intubation was the great difficulty of using cleansing solutions after it. It had been found that the diphtheria bacilli persisted just as long in those who had been subjected to calomel fumigations as in others. One thing could be said positively of the anti-toxin treatment, and that was that it had not so far given rise to dangerous symptoms. He would warn physicians, however, that already totally unreliable preparations, claiming to be the proper solution of the anti-toxin had been placed in this market.

Dr. Joseph E. Winters said that a great deal of importance has been attached to the use of a germicide in the local treatment of diphtheria. A 1:1,000 solution of bichloride of mercury will destroy the diphtheria bacilli if they are kept in it for two hours ; it must be remembered however, that a solution of this strength cannot be used in the nasal passages. The bichloride solution, even in the strength of 1:4000, is not a harmless one.

Epistaxis occurs far more frequently after irrigations with bichloride solution than where normal salt solution has been employed. We should also remember the danger of producing the constitutional effects of mercury. As it is practically impossible to destrey the bacilli in *situ*, our aim should be to use a harmless solution, such as the normal salt solution, so freely as to give the bacilli as little opportunity as possible to do harm.

The best solution to meet all pathological and physiological indications, is one containing one teaspoonful of salt and one teaspoonful of bicarbonate of soda to a pint of hot water. The salt renders the water unirritating to the mucous membrane, the soda stimulates secretion of the follicles of the membrane. In order to lessen irritation, diminish congestion and irritation at the site of the diphtheritic process, this solution should be used as hot as possible. It has been found practicable to use this solution at a temperature of 140° F. in adults and 125° F. in children; at this temperature tumefaction is lessened and healing of the eroded mucous membrane favored. As the diphtheria bacilli are killed at a temperature of 138° F., it is not impossible that irrigations at this temperature might actually hasten their destruction. The true object of local treatment in diphtheria must then be to wash away septic products, and promote healing. This can be best accomplished by the use of a very hot solution as already indicated.

When irrigation as a method of treatment was first described by me before this Academy four years ago, I laid great stress upon the importance of using the Davidson syringe. In treating severe cases where there is much obstruction in the nasal passages, the fountain syringe is absolutely useless, whereas the Davidson syringe will usually accomplish the removal of the obstruction. The fountain syringe is used in the Willard Parker Hospital simply because such a large number of cases have to be treated by irrigations.

I have previously stated that the steam croup tent appears to me to be a most pernicious measure. Steam should only be used by having a rubber hose attached to the steam kettle, and having the steam carried nearly to the child's mouth, and about four to six inches below the level of the child's nose. It may be used in this way continuously without exhausting the patient, whereas the other method is exhausting and dangerous. We now know that the diphtheria bacilli do not enter the circulation, and that the constitutional symptoms are due to the action of toxines; hence, I see no advantage in using the bichloride of mercury except for its possible action in increasing the number of red blood corpuscles, which it does when administered for a short time. Moreover, it seems to me that mercury is contra-indicated, because it adds another form of poisoning. Calomel sublimations in the treatment of croup have no specific effect; their only action is that of an irritant to the mucous membrane, thereby stimulating the secretion from the mucous follicles, consequently promoting separation of the false membrane. But while it is doing this, it is poisoning the patient. No one who watches such cases studiously will fail to become convinced of the dangerous effects produced by this mercurial treatment.

All the beneficial effects of this dangerous mercurial treatment can be safely obtained by the burning of sulphur candles, and the inhalation by the patient of sulphurous acid gas.

Dr. J. Winters Brannan said that in estimating the value of any special method of treating diphtheria, one was confronted at the outset with the difficulty of determining the grade or severity of the disease in the cases under observation. It was well known that the prognosis of diphtheria depended on whether or not there was a mixed infection; and hence, as Roux had suggested, a bacteriological examination should decide this important point for us. Such examinations had shown that where there was a streptococcus infection, the mortality was very much greater than where there was a pure diphtheritic infection. Recent tests would seem to prove the correctness of this view.

Dr. A. Caillé said that the average mortality of cases treated by anti-toxin had been from twelve to twenty-five per cent., as against a mortality of from forty to sixty per cent. in cases subjected to the more usual methods. He had personally treated with anti-toxin sixteen severe cases of diphtheria, and there had been two deaths, from heart failure. The usual treatment should be employed in conjunction with the injections of anti-toxin. Great care should be exercised to secure the anti-toxin from a reliable source, otherwise one might use a solution containing some of the toxines.

Dr. C. A. Leale said he considered the method of feeding children after intubation by lowering the head over the lap objectionable on account of the tendency of this position to excite spasm of the glottis and violent vomiting. He greatly preferred a method he had employed for the past ten years—the introduction into the stomach of food by means of a No. 10 velvet-eye catheter passed through the nose.

Dr. Louis Fischer said that up to the present time he had treated with anti-toxin 112 cases of diphtheria, with only four deaths. He did not approve of using this treatment in cases beginning with some complication, e.g. scarlet fever; but it should always be tried in cases of diphtheria of the larynx, as the improvement in such cases was not infrequently very marked after one injection of the anti-toxin.

METROPOLITAN MEDICAL SOCIETY, NEW YORK.

Ectopia Testis as an Etiological Factor in Inguinal Hernia, with the Report of Three Cases Complicated by Strangulated Hernia.—Dr. Thomas H. Manley read this paper, by title, on October 30th, 1894. He thinks that the chief factor in the production of inguinal hernia is an imperfect or non-descent of the testicle. After describing the normal development and descent of the testicle, and the conditions which complicate this descent and favor the production of a hernia, he discussed the value of hygienic treatment, the use of trusses, and of surgical interference.

The first patient, two years old, had an inguinal hernia on the right side, which continued to increase, in spite of the truss and other methods of treatment. It finally became irreducible and an operation for radical cure was done. The omentum, intestine and testicle were found lodged together and adherent. The adhesions were separated, the omentum cut away, and the intestines returned into the adominal cavity. The patient made a rapid and permanent recovery.

The last patient was a female infant four months old, with an indirect inguinal hernia on the right side, which was so painful that a truss could not be applied. The hernia was incarcerated and so painful that the child cried almost constantly. It slept poorly and was rapidly wasting. At the operation the mass was found to be firmly held in the labium and to consist of omentum and the right ovary. The adhesions were broken up and the mass reduced. The patient made a prompt recovery and is apparently permanently cured.

Clinical Instruction in Pediatrics.—We regret to find that we were mistaken in one detail of our editorial last month, and we are very happy to correct it. There is a full professorship of pediatrics at the University of New York, which is held by Dr. Joseph E. Winters ; and every one of the regular colleges in Chicago has a full professor in this department. We hope that in addition to the name, they receive the emoluments which properly belong to such an appointment from a large college.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

The Prevention and Treatment of Ophthalmia Neonatorum and the Necessity for more Effective Legislat on.—Dr. Charles H. May, of New York, in an instructive paper read at the meeting held on November 26th, 1894, showed that more effective legislation is needed, if blindness from ophthalmia neonatorum is to be reduced. He prefaced this portion of his paper by a resumè of the prevention and treatment of this disease.

Concerning prevention, he gave statistics from many obstetricians and lying-in asylums demonstrating the well-known reduction in the frequency after the use of Credé's method—the instillation of one drop of a two per cent. solution of nitrate of silver into the eyes of the newborn; the report of the Sloane Maternity Hospital, of New York, showed that during the past six years there had been no case among over four thousand births. In private practice among the better classes, nitrate of silver is usually dispensed with, and yet the occurrence of this ocular disease is rare. Practically, all the cases which occur in New York City and which lead to blindness are met with in the lower classes and especially in the practice of midwives.

Regarding treatment, he claimed that there was practical unanimity of opinion among oculists. Every case should be treated as soon as there was the slightest evidence of redness or swelling. Cold applications as long as the lids remained red, swollen and tense—but not beyond this stage, since too much cold might cause ulceration of the cornea especially in delicate children; frequent cleansing with luke-warm, satuated solution of boric acid (every half hour or every hour, depending upon the amount of discharge); one per cent. solution of nitrate of silver to the everted lids once a day after the acute symptoms had begun to subside and never during the first few days. Hot applications were useful after the lids had lost their angry look, if corneal ulceration existed. He dwelled upon the necessity for great caution not to injure the corneal epithelium in separating the lids by the fingers or retractors, since such abrasions formed favorable points for the entrance of germs from the discharge.

Finally, he showed by statistics from four of the largest eye dispensaries of New York—comparing a large number of cases occurring during during 88, 89 and 90 (the three years previous to the enactment of the present law) with cases occurring at the same institutions during 91, 92 and 93 (three years following the operation of the law)—that there has been very little falling off in the number of cases of ophthalmia neonatorum; and since as large a proportion of these cases result in blindness as formerly, the number of blind from this cause has not been diminished. Dr. May showed by reports from institutions for the blind in various parts of the United States that twenty per cent of all the blind became so as a result of ophthalmia neonatorum.

The present law requiring midwives and nurses to call in a legally qualified practitioner as soon as any redness or inflamation was noticed, went into effect in September, 1890. It did not have the desired effect because it was not made known in a sufficiently extensive manner, and because the conviction of offenders through the New York Society for the Prevention of Cruelty—the usual and easiest channel—involved much inconvenience and loss of time in the courts on the part of the informer and witness, the physician.

Dr. May succeeded in interesting the society to the extent of having this important matter referred to a committee who will endeavor to improve upon the present law, and, if possible, compell the report of every case to the local Board of Health, who will then assume the responsibility of seeing that every case is treated in the proper manner when it occurs in the practice of midwives or nurses

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For Warts:—

℞. Hydrarg. bichlor ....gr. v.
Acid. salicyl .... ʒ i.
Collodii .... ℥ i.

M. S.: Apply every day.—*Coll. & Clin. Rec., Clinique,* 1894, vii., 8.

Dr. Roux Decorated.—Dr. Roux has received from President Casimir-Perier the congratulations of the Government and the Cross of Commander of the Legion of Honor, in recognition of his work upon the serum treatment of diphtheria.—(*Med. Rec.*, 1894, xlvi., 594.)

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

Stated Meeting, Dec. 13th. 1894.

Congenital Ptosis.—Dr. Mary Putnam Jacobi presented a baby with congenital ptosis. At birth, the eye had been completely closed, but subsequently the ptosis had become partial. It differed from cases of this kind previously reported in being unilateral. The condition is quite rare, and in most instances the recti muscles are involved, which is not true of the present case. In a case described by Schenckel all the ocular muscles were imperfectly developed, but accommodation was perfect, as was also the response of the pupils to light. In another report, mention is made of two members of the same family being affected in this way. Gower speaks of combined paralysis of the facial and abducens as being rather more common than paralysis of the oculo-motor nerve. The question of the syphilitic origin of this condition naturally suggests itself, but there seems to be no reason for suspecting such a constitutional taint in the case just presented. It is possible that it may be one of the parasyphilitic lesions. The speaker said that so far as she knew, the only attempt to remedy this condition had been made by Evans, of Louisville, who had operated upon a case of bilateral ptosis according to a method devised by Pannus. In brief, this consisted in taking a flap from the lower part of the eyelid, and uniting it to the occipito-frontalis muscle, the object of the operation being to make this muscle take the place of the missing levator. The result in the case reported has been fairly satisfactory.

DISCUSSION ON TYPHOID FEVER IN CHILDREN.

Pathology and Occurrence. — Dr. W. P. Northrup opened the discussion. He said that the characteristic lesions in typhoid fever were to be found in the lymph nodules in the intestine, and in the spleen, and that they were constantly associated with the bacillus of typhoid fever. He had stated to the American Pediatric Society in 1892 that, so far as he had been able to ascertain, no case of typhoid fever had ever been observed at the New

York Foundling Asylum in a child under two years of age, and also that the existence of swollen Peyer's plaques and enlargement of the spleen and of the mesenteric nodes could not be considered in children, as they could in adults, as indicative of typhoid fever. No case of typhoid fever in a child under two years of age had been observed in that Asylum since that date, but he had recently seen in the Presbyterian Hospital a child just two years of age, sick with typhoid fever. This boy's mother had been ill with typhoid fever for three weeks, and the child himself had been sick for two weeks previous to his admission to the hospital. At the time of admission his temperature was 104.8°, his pulse 136, and his respirations 36. The spleen was sufficiently enlarged to be readily felt below the free border of the ribs, and there was a profuse typhoid fever eruption over the abdomen, chest and back. Under an exclusive milk diet, with sponge baths when the temperature was 103°, he progressed favorably, and was discharged cured after twenty-five days. His temperature fell to normal after he had been in the hospital eleven days. In this case, the history and physical signs clearly justified the diagnosis of typhoid fever, and the child was admitted to the hospital at a time when there were numerous adult cases of typhoid fever.

Dr. Northrup then exhibited a specimen showing lesions of the intestine very closely resembling those found in typhoid fever. They were found in a case in which there was also marked enlargement of the spleen. His object in presenting this pathological specimen was to emphasize the fact that from the presence of such lesions alone in children one was not warranted in making a diagnosis of typhoid fever. The specimen had been removed from a child of eight months and eight days who had been apparently well up to noon of one day in November. She was then observed to be extremely pale, and shortly afterward she vomited some blood. When seen by the physician at 4 P.M., the pallor and prostration were extreme. Death occurred about four hours later. The autopsy had shown the spleen enlarged and softened, the liver and organs generally congested, and the solitary follicles of the large intestine stained a dark color. The intestinal contents were apparently normal.

In conclusion, the speaker said that he considered that typhoid fever was not a disease affecting infants under two years of age; that the diagnosis rested on the same points as in adults; that splenic enlargement in infants should not be diagnosticated except the spleen could be felt below the free border of the ribs; and that enlarged mesenteric nodes, swollen Peyer's plaques and solitary follicles, and enlargement of the spleen was not infrequent in infants with a clinical history which would exclude typhoid fever.

"Enteric Fever in Children and Infants—A Clinical Study."—Dr. William L. Stowell said that for years typhoid fever in young children had been described as infantile remittent fever. From records of thirty-five cases of typhoid fever occurring in children in his dispensary practice during the past few years he had obtained the following data: The shortest duration had been ten days, and the longest fifty-two days. The average age of the little patients had been seven years, and it had occurred with nearly the same frequency in both sexes. Relapses had occurred in eight per cent. of the cases. Tympanites had been a nearly constant symptom, as had also gurgling in the ileo-cæcal region. There had usually been more or less diarrhœa at some stage of the disease; in twenty-nine per cent. of the cases it had been quite marked. The characteristic eruption had usually appeared on the eighth day; it had been distinct in sixty-six per cent. of the cases. The temperature had been very irregular, but in most cases it had not risen above 102.5° or 103°. Headache and delirium had both been quite common. Hæmorrhage from the bowel had not been noticed in any of the cases. Pneumonia had complicated ten per cent. of the cases, but had not been very severe. Enlargement of the spleen had not been noticed in many of the cases. In one boy the illness began with a temperature of 105°, but when the eruption appeared on the eighth day the temperature fell to 100°. Four days later, it again rose to 105°,and remained at 104.5 for eighteen days, when without apparent cause it again fell. It subsequently rose to 103°, the disease eventually terminating by lysis.

In making the differential diagnosis, it should be remembered that pneumonia usually develops more rapidly than typhoid fever; that simple diarrhœa and enteritis are not accompanied by such high fever, and that enteritis is characterized by pain and the passage of green stools.

The treatment of these cases had consisted in keeping the children quiet, giving them fluid diet, using turpentine and salol for intestinal antisepsis, and resorting to cold sponging for the reduction of high temperature.

The author's conclusions were: (1) That typhoid fever is common in childhood, and not more rare in infancy than could be explained by lack of exposure to infection; (2) that it does not differ in type from that seen in adults; (3) that its duration is shorter because of the more reparative processes in children; (4) that the prognosis is better in children because they usually have healthy organs, and are consequently less liable to suffer from complications; (5) that those children who die of typhoid fever, die as do adults, of perforation or exhaustion.

Treatment and Management.—Dr. Henry D. Chapin continued the discussion with some remarks on the treatment and management of typhoid fever. He said that it was often difficult to keep these little ones in bed, as they should be, during the entire febrile stage, but that if this were insisted upon, this stage would be shortened and complications in great measure prevented. The staple article of diet should be cow's milk, one to two quarts daily—and where this is difficult of digestion, lime water or some of the carbonated waters should be added. They could often be made to take large quantities of milk to advantage by insisting that the milk should be slowly sipped while quite hot. For reducing high temperature he had found a mixture of finely cracked ice and flaxseed meal in an ice-bag applied to the head useful, as were also sponge baths given at a temperature of 73° with a mixture of alcohol, one part, and water, three parts. Tub baths were very rarely required. During the first week it had been his custom to give small doses of calomel, but later on he refrained from administering cathartics by the mouth. Where there was much diarrhœa, he prescribed salol or the subnitrate of bismuth, and for impaired digestion, an acid pepsin solution. The discharges should be disinfected by mixing them with fresh lime, six ounces, and water, one gallon; or by the use of a one-to-twenty solution of carbolic acid, or a one-to-five hundred solution of bichloride of mercury. In any case the mixture should be allowed to stand for an hour before emptying out the discharges. All articles of clothing should be boiled for twenty minutes before being placed in the carbolic acid solution, or a one-to-one thousand bichloride solution. They should be allowed to soak in the disinfecting solution for about two hours. For the irritative cough from which many of these children suffered, he had found nothing so useful as small and oft-repeated doses of codein or of paregoric. After the subsidence of the fever, the patient might be allowed milk-toast or custards.

Dr. R. C. Newton, of Montclair, continued the discussion by referring to some of the cases he had seen in the Montclair epidemic. He said he felt sure that many errors were made in diagnosticating typhoid fever in children, and he cited a case in which a consultant had insisted in making such a diagnosis, yet recovery had quickly followed the administration of quinine. In most of the cases he had seen in the recent epidemic, there had been a very sudden fall of the temperature at the end of the second week to normal, or even below this point. In one family he had attended four children in succession. The first three had the eruption and every evidence of typhoid fever, but the fourth child's temperature fell to the normal on the second day ; the child was not sick enough to go to bed, and he had been unable to convince himself that this last child had really had typhoid fever. The cases had reminded him of the "mountain fever" as he had seen it in New Mexico. This was probably nothing more than a variety of typhoid fever. The last few cases occurring in the epidemic at Montclair had done very well under the administration of chlorine water. He believed that in some instances it was possible to abort typhoid fever by the early and free administration of calomel.

Dr. William B. Noyes said that out of two thousand recorded autopsies on typhoid fever patients, there had been only eight patients under ten years of age. One of these was an infant of two years, and the other a child of nine years. This apparent rarity could be easily explained by the fact that children with typhoid fever rarely came to autopsy. He thought that Dr. Northrup was the only one who claimed that the pseudo-typhoid lesions, such as he had exhibited, were frequently observed in autopsies made on little children. He had never seen any temperature charts from cases of infantile typhoid fever hich were at all typical. It was often impossible to make the diagnosis for two or three weeks. The first absolutely sure symptom was the characteristic eruption. It was not at all improbable that certain cases diagnosticated as meningitis were really cases of typhoid fever.

Dr. A. Seibert objected to the use of the term "enteric fever" as misleading. As the epidemic at Montclair was caused by an infected milk supply, this should teach us the necessity for insisting that all our patients should avoid drinking even in winter any raw milk. For the last six years he had been treating his cases of typhoid fever by rectal irrigations, given from one to three times a a day with the object of removing the bacteria and their toxic products. This, together with the use of an anti-milk diet, had yielded in his hands remarkably good results. The mortality in the hospital cases so treated had been extremely small, and in uncomplicated cases, the temperature had uniformly fallen to the normal on the tenth day.

Dr. H. Koplik said that he thought all suspected cases of typhoid fever in children under two years of age should have the blood examined in order to exclude malaria. He had frequently seen with Dr. Welch at autopsies at Bellevue Hospital the same pseudo-typhoid lesions as had been exhibited by Dr. Northrup, and certainly in those cases there was no indication in either the pathological or clinical record that they were cases of typhoid fever. He had never seen a case of typhoid fever in a child under two years, and he was convinced that it was extremely rare in New York city.

Dr. A. Jacobi said that he still held the same opinion that he expressed in 1875, viz.: that typhoid fever was not an uncommon disease in infancy and childhood. The fact that out of two thousand autopsies on typhoid fever patients there were very few children could be explained. —(1) by the autopsies having been made in a hospital where there were few children as patients ; and (2) by the fact that comparatively few children with typhoid fever were sent to hospital, as in these young patients it could be more easily treated at home than many other acute inflammatory diseases. He would like to ask Dr. Northrup to what he attributed the ulcerations seen in his specimen.

Dr. Northrup replied that the ulcerations were due to a poison, but not to the poison of Eberth's typhoid bacillus. The child had been in the ward all its life under constant supervision, so that if it had been longer ill this would have certainly been known. The child had been nursed by a woman who had also nursed another child. Both children had been partly nursed, and partly fed on sterilized milk.

Dr. A. Jacobi said that typhoid fever was peculiarly liable to escape detection in children for a considerable time, and he believed that it was not at all improbable that this child had really had typhoid fever. As babies are inclined to have loose bowels, the bacilli of typhoid fever were quickly discharged from the body, thus lessening the liability of little ones to this disease.

Dr. Charles G. Kerley said that during his four years as resident physician of the Mount Vernon Infant Asylum, where a large number of very young infants came under his observation, out of about 450 autopsies he had never found a lesion of typhoid fever.

Dr. Northrup said that he wished the members of the Section to distinctly understand that he thoroughly believed in the statement that typhoid fever was not common in young children. The New York Foundling Asylum boards out in the poorest sections of the city and vicinity 1,100 infants, who are at once returned to the Asylum if they are sick at any time before they are three years old. Out of about two thousand autopsies that he had made there he had never seen a case with the clinical and pathological record of typhoid fever. He had seen just such intestinal lesions as those he had exhibited, which had been produced solely by turpeth mineral. Dr. Prudden had repeatedly failed to find the typhoid bacillus in cultures from such lesions.

Chorea.—Dr. W. B. Atkinson gave the following mixture to a girl, aged thirteen years, with the most satisfactory result:

℞ Choral....................... ʒ ii.
Ext. cimicifugæ fld.........fl ʒ ii.
Elixir simplicis ....fl ℥ iii.

Sig.: One drachm every three hours.—(*Med. and Surg. Rep.*, 1894, lxxi., 795.)

Life Insurance of Children.—The Memphis Board of Health has sent a communication to the Tennessee State Board of Health, calling for such action as will lead to legislation prohibiting the insurance of the lives of infants and children within the State, on the ground that the practice leads to criminal negligence of children, and is to that extent prejudicial to public health.—(*North Am. Pract.*, 1894, vi., 520.)

Ophthalmia Neonatorum.— Kalt recommends large and frequent irrigations with a 1 to 5,000 solution of permanganate of potassium.—(*Gaz. Méd. d. Paris*, 1894, i., 499.)

Current Literature.

MEDICINE.

Biddle, D.: Youngest England. (*Brit. Med. Journ.*, 1894, ii., 821.)

An analysis of the Annual Report of the Register-General for 1892 would seem to show that, whilst the general condition of England as a place to live in has improved, leading to a diminution in the death-rates at all ages, that is, in the average death-rates, the comparative incidence of mortality upon the group under five years of age has continuously increased. Whether due to loss of stamina or not, the comparative power of resistance of this group to disease and death grows less year by year. Though greatly diminished in numbers, the group can scarcely be said to have become more select. There is reason to fear that the diminution takes place at the wrong end of the group, whilst the least fit multiply pretty much as heretofore. However, considerably more than one-fourth of the deaths occurring in this group are due to zymotic diseases, and these and a multitude of others belong to the class called "preventable." Is this a misnomer?

Bruneau: Caffeine, and its Indications in Certain Acute Diseases of Children. *Thése de Paris*; review in *Revu Internationale*, May 10, 1894.

The drug gives excellent results in all adynamic diseases where the cardiac tone is lowered, and especially in respiratory affections which seriously impede the cardio-pulmonary circulation. When given before cold baths, it renders good service in preventing collapse and syncope. It causes a more energetic, but often a more transient cardiac stimulation than does digitalis; in conjunction with injections of ether, the action of caffeine is that of a tonic as well as of a stimulant. Children bear it well, and the slight cerebral excitement it produces is no drawback to its usefulness. The preferable method of administration is by sub-cutaneous injection, as the stomach absorbs the drug but slowly, and gastralgia often results. The injections are but slightly painful and are rarely followed by abscess formation if antisepsis be observed.

Hill, J. Sutcliffe (Bellows Falls, Vt.): Large Dose of Sulphonal for a Child. (*Med. Rec., N. Y.*, 1894, xlvi., 339.)

The child was eighteen months old and had taken 34 grains of sulphonal in a little over six hours. The child was apparently unconscious, pupils contracted, breathing shallow but regular, pulse 120. The case ended in complete recovery. There was one very apparent peculiarity, viz.: ptosis of both eyes, which continued for four days and was very marked.

Ingals, E. Fletcher (Chicago): Hypertrophy of the Pharyngeal or Luschka's Tonsil. (*Journ. Am. Med. Asso.*, 1894, xxiii., 483.)

An analysis of his cases leads to the following conclusions:

Hypertrophy of Luschka's tonsil is comparatively infrequent, occurring in only two per cent. of the patients with diseases of the chest, throat and nasal cavities, and probably in not more than one-half of one per cent. of all cases.

In this locality the disease is apparently 50 per cent. more frequent in the country than in the city, and it occurs more frequently in girls than in boys.

The disease is observed in 90 per cent. of the cases before the fifteenth year of age and is probably always developed in infancy or early childhood, some cases appearing to be congenital.

Ten per cent of the cases are apparently hereditary. Sixteen per cent. may be attributed to frequent colds; but in 63 per cent. no etiologic factor can be discovered.

In the great majority of cases the affection is apparently due to the same causes as enlargement of the faucial tonsils, and in 76 per cent. of the cases the faucial tonsils are also hypertrophied.

In a considerable number of cases, amounting to 18 per cent. the general health is materially injured by this affection.

The sense of smell is obtunded or lost in 11 per cent.

Hypertrophy of Luschka's tonsil is a frequent cause of headache, it being present in 27 per cent. of the cases.

It is a frequent cause of deafness, the hearing being affected in one-third of the cases. The deafness so caused may be benefited in a large majority (70 per cent.) of cases by operative procedures, 66 per cent. being greatly ameliorated and about half of these being completely cured.

The disease causes much alteration in the voice in about

70 per cent. of the cases. In nearly 18 of these the voice may be greatly improved as the result of treatment.

In about 40 per cent. of the cases there is decided dyspnœa, resulting from partial closure of the naso-pharynx.

Forty per cent. of these patients have more or less cough, in about one-third of which it is quite severe.

The pharyngeal follicles are enlarged in about one-fourth of all the cases. The nasal cavities are more or less closed by swelling or hypertrophy in 50 per cent. of the cases, and 56 per cent. complain of catarrhal symptoms, but in about nine-tenths of these the symptoms are removed by extirpation of the glandular tissue.

Although deterioration of the general health is not usually complained of, it is found as the result of operation that in many cases great improvement occurs immediately, the patient often gaining 30 per cent. in weight within six months.

Reports on Diphtheria to the International Congress of Hygiene and Demography, held at Buda-Pesth, September, 1894. (*Brit. Med. Journ.*, 1894, ii., 552.)

Professor Löffler, of the Griefswald Hygienic Institute, presented the German report. He said that the specificity of the diphtheria bacillus and its value as a means of diagnosis in doubtful cases was now generally recognized; and he advocated strongly the appointment of bacteriologists in every district, to whom should be committed the duty of making the necessary examinations. After commenting on the fact that the bacillus might be met with in the upper air passages of persons apparently healthy, he observed that, as a rule, the bacillus ceased to be discoverable shortly after the subsidence of the local symptoms, though it might persist in a virulent state for weeks and months. In organic matter, not exposed to light, the bacillus could survive for many months. It was, therefore, liable to persist in dark, damp, and dirty dwellings. The first hygienic measure, therefore, was attention to the cleanliness and dryness of the houses, and the thorough admission of light and air. The German Committee also insisted upon the value of routine cleansing of the mouth and nose with a weak solution of common salt or carbonate of soda. Cleanliness of the teeth, extraction of bad teeth, and the removal of enlarged tonsils were also advised. The Committee also advised compulsory notification, and in addition to isolation and thorough disinfection, the enforcement of the provision that isolation should not cease until the disappearance of the bacillus had been ascertained by bacteriological examination.

The report from the American Committee was presented by Dr. J. S. Billings, and was illustrated by a series of maps. He stated that in 1880, of every thousand deaths from known causes, 78 were due to diphtheria, whereas in 1890 only 49 per 1,000 were ascribable to the disease. In 1880, in the rural districts of America, the proportion of deaths from diphtheria was 83 per 1,000, and in the cities 57 per 1,000, but in 1890 the proportion had fallen to 50 for the towns and 49 for the country. He considered that the chief cause of the diminished mortality was the recognition of the fact that the disease was spread by contagion, and was to be checked by isolation and disinfection. A system of bacteriological examination was already enforced in certain cities in the United States. The results show that 80 per cent. of the cases of croup were true diphtheria.

The report of the British Committee was submitted by Dr. Edward Seaton, M.O.H. for the County of Surrey. He dealt first of all with the increase of diphtheria in the United Kingdom during the twelve years ending 1892. The increased prevalence of the disease in London and the south-eastern counties of England, and its lighter incidents in North Wales and other country districts suggested that the spread of diphtheria was mainly governed by the habits of populations. The great change to be noted in these habits was the influx of the country population into town, and the collection of children in schools. He considered the education of the public to understand the necessity for the systematic encouragement of scientific observations and research in matters connected with public health was the most urgent need of the day.

The report of the French Committee dealt especially with the importance of the early recognition of the disease, which could only be attained by the systematic examination of the throats of children. M. Roux, of the Pasteur Institute, spoke strongly in favor of the antitoxin treatment, and stated that by the use of Behring's serum the mortality in one of the Paris hospitals had been reduced from 40 per cent. to 25 per cent. He advocated also the use of prophylactic inoculations. Mr. Matthew A. Adams, of Maidstone, contributed a paper on the Relations between the Occurrence of Diphtheria and the Movements of the Subsoil Water. He brought forward statistics for nine years in support of the view that the prevalence of diphtheria was closely connected with dampness of the soil.

Hart, Ernest: The New Serum Treatment of Diphtheria. The Situation in England. (*Brit. Med. Journ.*, 1894, ii., 889.)

After an examination of the figures thus far furnished from abroad and of the thirty-six cases treated by the serum in England, he makes the following announcement:

"After consultation and conference with Sir Joseph Lister, President of the British Institute of Preventive Medicine, I am led to believe that that Institute will be able to fulfil the public needs of the case without having recourse to a special subscription, and for that sole object. Sir Joseph Lister informs me that by the steps already taken at that Institute it is already capable of supplying, and is supplying, the immunized serum to no inconsiderable extent, one horse being already available for the purpose of furnishing the necessary liquid; and another horse is so far advanced that it will also shortly be available, and yet further supplies will be forthcoming at no distant dates. So successful have been the proceedings thus far, that this serum is found to be of a higher degree of efficiency than any that is available from foreign sources. Moreover, the serum obtained from the Institute will be furnished, under circumstances which will satisfy certain important *desiderata*, not always obtainable where this fluid is obtained, through commercial sources. In the first place, it will be supplied at the bare cost of production, and not with an eye to profit. Under these circumstances, it is believed that a dose sufficient for use in an ordinary case can be furnished at a cost which shall not exceed from 6d. to 9d., whereas the material hitherto sold here from abroad has varied from 5s. to 10s. for the requisite dose. Inasmuch as one injection is usually sufficient, and rarely, if ever, two are required, the total cost of the therapeutic material for each case will not exceed 9d. or 1s. 6d., so that as a drug it will not be more expensive than the usual medicaments hitherto employed. The burden upon the hospitals, therefore, will by no means be in excess of the present cost for the treatment of such cases.

"Moreover, the serum thus obtained will be produced under conditions of accurate and careful supervision by Dr. Ruffer, the Superintendent of the Institute, and Professor McFayan, its veterinary expert. And it will be scientifically tested, so as to ensure its efficiency and its purity in all cases. This has not always been the case, it is believed, with the material which is commercially produced, some of which has seemed to be inefficacious. It must be remembered that in the production of an active but complex organic substance such as this, skill, conscientious control, and the observance of minute precaution are highly requisite; while the disturbing element of commercial competition is likely to be prejudicial.

"In view of these circumstances, and of the fact that many of the foreign sources of supply are either for the moment exhausted or fully used up by local requirements, I have arrived at the conclusion that in lieu of opening any such subscriptions at present it will be desirable to direct those of my correspondents who are so deeply interested in this matter to the British Institute of Preventive Medicine for any further information, only advising them that they may have to exercise some patience, and to wait yet awhile until the supply is equal to the demand. It may be well further to add that the horses suffer no pain from the inoculation or from the extraction of the immunizing serum, and that they are at the present moment fatter, sleeker, and in better condition in every way than they were at the outset."

Bokai: Anti-Toxin Treatment of Diphtheria. (*Brit. Med. Journ.*, 1894, ii., 1123.)

Professor Bokai has reported to the Royal Medical Society of Buda-Pesth his results in a first series of 35 cases of diphtheria treated in the Children's Hospital there between September 11th and October 25th. These cases comprise all those suffering from diphtheria admitted into the hospital during that period. The serum used was that prepared under the direction of Professor Behring. The number of children who died was 5, a mortality of 14.28 per cent. Of these 35 children 20 were under 4 years of age, and 7 under 2 years. Of the children who died, one was 13 months old, one 2 years old, one 2½, one 4, and one 5 years. Among the fatal cases there were 3 in which septic infection had occurred, in one during the course of scarlet fever. In one, death was due to cardiac failure during convalescence, and in the fifth the trachea was involved, and there was also purulent bronchitis. Of the 30 children who recovered intubation was performed in 12. Professor Bokai gives a table showing the number of cases and the mortality during

September and October in 1891, 1892, and 1893, to compare with the results obtained in the same months in 1894, when the anti-toxin treatment was in use. The death-rate in these months in 1891 was 56.8 per cent.; in 1892, 42.9 per cent.; in 1893, 61.7 per cent. These figures are to be compared with the death-rate already stated for these months in 1894, which was 14.28 per cent. In all the 35 cases treated Loeffler's bacillus was found, except in 2; the failure in these 2 may have been due to a fault in the *technique* of the bacteriological examination; in one of these the patient's sister, attacked about the same time, was proved by the bacteriological examination to be suffering from true diphtheria. The most instructive point in these statistics appears to be the extremely good results of intubation in combination with the anti-toxin treatment.

Malcolm; Frith; Fowler; and Wakeling: The Anti-toxin Treatment of Diphtheria. (*Brit. Med. Journ*, 1894, ii., 933 and 1,007.

Four cases are reported, of which one died.

Newington, C. W. H.: Anti-Toxin Treatment of Diphtheria. (*Brit. Med. Journ.*, 1894. ii., 1123.)

He reports four cases, all of which recovered.

Maurice, O. C.: Two Cases of Diphtheria Treated with Anti-Toxin. (*London Lancet*, 1894, ii., 973.)

The first case was a girl, four years and three months old, with a severe case of pharyngeal, nasal and laryngeal diphtheria. Treatment was begun on the fourth day of the disease, and she died on the tenth day, the antitoxin apparently prolonging her life. The second case, a girl aged two years and six months, was a mild one and she made a rapid recovery.

Hollis: Diphtheria Treated with Anti-Toxin. (*London Lancet*, 1894, ii., 856.)

He read before the Brighton Medical Chirurgical Society notes of two cases. 1. A boy with membrane on the uvula, both tonsils, and anterior pillars of fauces; the pharynx was clear; he was injected with 1 c. c. of anti-toxin and speedily recovered. 2 A boy aged four was admitted with dyspnœa and was cyanosed. Tracheotomy was performed. Four hours afterwards 0.8 c. c. of anti-toxin was injected, and the temperature gradually rose for four hours. A piece of membrane was removed from the tube. Albumen persisted in the urine for some days, but finally disappeared. The tube was removed on the fifth day, and the child made a good recovery.

Gleason, W. S., (Newburg, N. Y.): The Use of Anti-Toxin in Diphtheria following Scarlet Fever. (*Med. Rec., N. Y.*, 1894, xlvi., 598.)

The patient was a boy, aged eight years. Two injections of Aronson's serum was used, one of twenty minims and six hours later a second of forty minims. Within twenty-four hours after the use of the serum a remarkable change took place for the better, proving conclusively that the absorption of septic material ceased at once, and produced a reaction not found in such intense conditions.

Saw, Athel J. H: Six Cases of Tracheotomy for Diphtheria Treated by Aronson's Anti-Toxin Diphtheriæ. (*London Lancet,* 1894, ii., 851.)

The ages were respectively (*a*) eleven months, (*b*) five years, (*c*) six years, (*d*) one year and seven months, (*e*) five and a half years, and (*f*) seven years. With the exception of (*a*) the infant of eleven months, they all made a rapid recovery. After the fourth or fifth day the membrane, which previously had come up abundantly through the wound, ceased and the wound was allowed to close. In none of the cases did the wound become unhealthy, neither was there any cellulitis of the neck, although on two occasions the neck showed signs of swelling the morning after the operation. A striking feature of the cases was that by the third or fourth day after the operation the patients' general condition had completely changed. They were bright, took interest in their surroundings, and played with their toys. With regard to the fatal case, the infant was only eleven months old, and was moribund when admitted. The operation was performed without an anæsthetic,the patient not stirring, and death occurred the following morning. A necropsy showed that the membrane extended into the secondary divisions of the bronchi. The proportion of recoveries at this hospital during the past twelve months in tracheotomy for laryngeal diphtheria (without anti-toxin) has been 30 per cent. For twelve years we had not saved the life of a child under two years of age.

Goler, G. W. (Rochester, N. Y.): Diphtheria: How is

it Propagated? (*Buffalo Med. and Surg. Journ.*, 1894, xxxiv., 9.)

It is only within the scope of this short paper to briefly point out remedies applicable under those conditions which have been shown to exist. These are:

(1). Repair defective plumbing and secure adequate drainage in every home where defects are found to exist.

(2). Guard all means of contact by sufficient and rigid quarantine, so that patients having had diptheria shall be really well before they are allowed to mingle with others. Public drinking cups in schools and elsewhere to be abolished. A system of distributing lead pencils in public schools to be so arranged that each child shall have his own lead pencil.

(3). Laws governing the construction and maintenance of those stables from which our milk supply is drawn.

(4). The sterilization of all milk for children's use.

Johnston, Collins H.: Treatment of Diphtheria in Dresden. (*Abstract from letter in Phys. and Surg.*, Detroit, 1894, xvi., 316.)

The treatment of this disease at the children's hospital is very simple, and yet effective. As the disease is primarily a local one, the greatest emphasis is placed upon local treatment. No drugs at all are given internally, but the patient is fed as much as possible with milk, eggs, meat, bread and butter, beer, etc.; wine or brandy is occasionally prescribed. Twice a day the nose and throat are very thoroughly cleansed with a weak solution of creoline or lime-water, injected with some force from a syringe. A nurse sets the child in her lap, puts its legs between her thighs and holds its hands behind its back with her left hand while her right presses the child's head firmly against her breast; another nurse then depresses the child's tongue with one hand, and makes the injection with the other. The throat is then swabbed with balsam of Peru or glycero-tannin by means of a cotton-wrapped probe or sponge holder. As soon as laryngeal symptoms present themselves the child is removed to a room the air of which is kept saturated with steam. If the symptoms of stenosis are not thereby relieved, but increase in severity, tracheotomy is performed. Children are, however, frequently brought in in whom severe stenosis of the larynx is present, but who are soon relieved by the warm, moist air, good food, stimulation, and energetic syringing, so that no operation is necessary. Sprengel makes an exception to his rule of using ether for anæsthesia in children, and uses chloroform in tracheotomy. He always makes the low operation, below the isthmus of the thyroid gland. After the operation the child is kept upon its stomach a good part of the time, and the throat is not syringed again for twenty-four hours, at the end of which time the usual treatment is resumed. The child is kept in a warm, moist atmosphere as long as the tracheotomy tube is worn, which is usually five or six days. It is sometimes removed on the third day. Nothing is placed over the mouth of the tube. The results of tracheotomy in this hospital are usually good. In 1893 it was performed one hundred and ninety-nine times with fifty-five per cent. of recoveries, and in 1891 on hundred and ninety-eight operations were made with sixty-three per cent. of recoveries. Considering the fact that children are often not brought to the hospital until they are almost dead, occasionally dying before the operation can be performed, these results are, I think, remarkably good, and should encourage practitioners not to put too light an estimate upon this operation. I have frequently seen a child sitting up in bed eating bread and milk the day after its performance. Many other plans of treating diphtheria have been tested in this hospital, such as papoid, strong bichloride solutions, Seibert's injections of carbolic acid into the tonsils, intubation, etc., but the above plan has given the best results. The treatment for scarlet fever is nourishing food, baths when the temperature is high, confinement in bed three weeks, and in the hospital six weeks. No drugs are given internally, and if the throat symptoms are severe, it is treated as above in diphtheria. The method of disinfecting the hands employed by Sprengel is interesting from the fact that he and his assistants often go directly from an operation for tracheotomy to the surgical clinic. The hands are scrubbed three minutes with brush, soap and water, then one-half minute in three per cent. carbolic acid solution, and one-half minute in 1–2,000 bichloride solution. The nails are cleansed thoroughly and scrubbed with a five per cent. solution of carbolic acid. Little sand glasses are placed before each washbasin by which the duration of the disinfection is timed.

Chapman, W. Carroll (Louisville, Ky.): Membranous Croup, with a Report of Cases. (*Med. Progress*, 1894, x., 158.)

Four cases are reported and the following conclusions given:

1. The effect of a proper solution of H_2O_2 upon the membrane of *croup* and that of *diphtheria* when properly applied is identical, which strengthens the claim of bacteriologists, that the etiology and morbid anatomy are the same.

2. One reason that the clinical aspects differ is that the Klebs-Lœffler bacillus is in a modified form in membranous croup, or laryngeal or tracheal diphtheria, due most likely to the fact that the tissues here are not adapted to the complete development of the bacillus, and its consequent inability to produce the toxic albumin in virulent form.

3. The second reason is the resistance offered, by the tissues of this locality, to the absorption of the poison (Daly).

4. In the treatment, hydrogen dioxide is indicated by spray, first on account of its bactericidal properties, and secondly to counteract by inhalation the poisoning by carbon dioxide, which usually is the cause of death in these cases.

5. Calomel, chlorate of potash and chloride of iron are indicated for about the same reasons given in 4.

It seems reasonable that further observation along this line will result in a decrease in the mortality due to the above disease.

Pressly, E. W. (Clover, S. C.): Widespread Paralysis Following Diphtheria. (*Med. News*, Phila., 1894, lxv., 188.)

The patient was a girl, aged eight years, and the paralysis began in the muscles of the soft palate during the early portion of the convalescence.

The paralysis next invaded the ocular muscles, giving rise to strabismus. The sphincter muscles of the iris became paralyzed, and the pupils enormously dilated. Diplopia was also complained of. In a short time the paralysis had involved both arms and legs, and the little girl was unable to turn in bed. The knee-jerks were entirely absent, and the surface of the skin not normally sensitive to touch.

Gradually, under treatment, the paralysis disappeared, and now there only remains a slight difficulty in the articulation of certain sounds.

The treatment consisted, during the attack of diphtheria, in the use of large amounts of tincture of ferric chloride and whiskey, together with the use of antiseptic applications to the throat.

For the paralytic trouble strychnine, general friction of the entire body, bathing, and rolling in the open air in a child's carriage was used.

Hall and Munn: A Study of Scarlet Fever at High Altitudes. (*Journ. Am. Med. Assoc.*, 1894, xxiii., 141.)

The report is based upon a study of 285 cases of scarlet fever seen at altitudes varying from 4,000 feet above sea-level to 5,500 feet. It seemed much like the same disease seen in other localities and there was no reason for thinking that this disease was modified by altitude.

Hecht: A Case of True Relapse in Scarlatina. (*Revue. Internationale*, June 10, 1894; from *Rev. Med. de l'Est*, Apr. 1, 1894.)

A boy of seven years had an attack of scarlatina, remarkable for the rapidity and intensity with which the eruption became generalized. On the third day the temperature fell, and on the fifth the rash had entirely disappeared, desquamation commencing soon afterward. Fever reappeared on the twelfth day of the illness, followed five days later by a second scarlatinal eruption. The temperature ranged from 38.4° to 39.3°C. for eight days, then fell to normal, and then remained at 36.5° C. for some time. The eruption lasted six days. Convalescence was unmarked by any incident except swelling of the lymph nodes in both mastoid regions.

Attention is called to the following facts: the equal intensity of the successive eruptions, the feeble febrile reaction, the fever preceding the relapse by five days, the absence of complications, the age of the child, and the date of the relapse. The last two facts are in accordance with the cases already published.

Ferguson, Jas.: Scarlatina and Measles Coexisting in the Same Person. (*Brit. Med. Journ.*, 1894, ii., 868.)

On June 29th a boy of nine had sickened and complained of sore throat; next day a scarlatinal rash was undoubted. By July 6th desquamation was distinct on neck, breast, abdomen, and thighs. On the 9th he had severe coryza and a constant irritating cough. On the 10th he was covered over with a most intense eruption of measles. Desquamation, as if accelerated by the second skin attack, proceeded with unusual rapidity. It was impossible to trace the source of infection, but it is noteworthy that the two poisons must have found a lodgment in the child at much the same time. The boy made an excellent recovery.

Noyes, William B. (New York): Enteric Fever in Infancy. (*N. Y. Med. Rec.*, 1894, xlvi., 1.)

Eight cases are reported, and he bases the early diagnosis on the following symptoms:

1. Any long-continued fever that will not yield to appropriate doses of quinine is suspicious, especially when higher in the evening, and when no existing conditions of the throat and lungs or bowels suggest an explanation. A temperature remaining continuously high, and yielding, if systematically taken, a fairly typical typhoid fever curve after a few days. Jacobi lays stress on the probability of typhoid with a continuous high fever, which is well borne by the infant.

2. Gastro-intestinal disorder, especially when a decided tendency to constipation is present; putrid stools of an especially offensive character and odor when there is any diarrhœa. If these are only seen on the diaper they will not look very different from the green spinach stools that occur in other diarrhœas, because the fluid is soaked up on the napkin. If seen in a vessel, the thin, semifluid character, greenish particles, and all the characteristics of a typical "pea-soup" stool are present. If there is trouble with insufficient digestion of food, the lumps of undigested casein will somewhat change the appearance. The lack of acute symptoms of an intestinal nature is more characteristic than violent symptoms.

3. The first absolutely sure symptom is the appearance of rose spots, which may come early or late, or in two or three crops, and are said by some writers to occur quite as regularly as the rash in scarlet fever.

Roseola, or sudamina, or other indefinite rashes, may be present at any stage, and possibly confuse diagnosis.

4. Symptoms of headache, which a baby will indicate by rubbing or picking at its head, nose, or ears, or burrowing its head back in the pillows, but not by active head symptoms which would characterize meningitis. As the disease goes on these head symptoms will frequently increase.

5. A tongue coated with yellowish or brownish-white fur, generally red at the tip or sides. It may be so heavily coated and the entire mouth so affected that a condition resembling aphthous stomatitis may be present.

6. Enlarged spleen is very important when found, but not always to be accurately demonstrated in a young child, especially if tympanites is present.

7. Tympanites, sometimes excessive, but in most recorded cases very moderate.

8. Bronchitis seems to be almost as regular a symptom as in measles, agreeing with the pathological changes demonstrated by Uffelman of swelling and redness of bronchial tubes, but the breathing is, later, too superficial to make râles.

9. There may be angina. I have seen it twice, once in the present case, and once in an older typhoid patient.

10. The stools, when carefully examined very early in the disease, may contain typhoid bacilli, but this has very rarely been detected in most of the recorded cases. If it could be, it would be of very great importance as an absolute means of diagnosis, but after the second week it is very rare to be able to find them.

Two other suggestions are made as a result of the study of these cases:

1. Sterilize or Pasteurize all milk used for young children, and boil all water during the early years.

2. In all cases of diarrhœal nature in children, disinfect the stools—a measure indicated if it is only a simple summer diarrhœa, since the more recent studies in its bacterial origin, and doubly indicated from the possibility always present that these cases may be irregular or hidden typhoid fever.

Schofield, S. R.: Perforation of a Typhoid Ulcer in a Young Child. (*Brit. Med*, *Journ.*, 1894, ii., 809.)

As perforation of a typhoid ulcer in a child is such a rare occurrence, the following case, being possibly the earliest on record, is worthy of notice. The patient, a boy aged one year and nine months, was admitted on April 12th, 1894.

Three weeks before admission the child's appetite began to fail; previously to this he is said to have had good health. Vomiting soon set in, and he rapidly lost flesh. Three days before admission the vomiting increased, the abdomen became distended, and there was considerable diarrhœa, the motions being slimy but free from blood. He had also a slight cough. A month previously a patient suffering from typhoid fever had been removed from the same house to a fever hospital.

On admission the child was noticed to be very wasted. The abdomen was distended and evidently tender, and the tongue was furred. No enlargement of the spleen could be made out and no typhoid spots seen. Moist *râles* were heard at the bases of the lungs; the pulse was rapid and feeble.

The following day there was increased distension of the abdomen and more frequent sickness; the vomited matter being green and offensive; the bowels were constipated.

On April 14th the child was very restless. These symptoms gradually increased in severity up to the time of death, April 16th.

A necropsy was made twelve hours after death by Dr. Walter Carr, from whose notes the following account is derived. The peritoneal cavity contained no fluid, but there were a few flakes of lymph between the coils of the intestine and about the liver and spleen. One of the lower coils of the small intestine was adherent to the front of the cæcum, and between the two was a small cavity, its walls completed by lymph. This cavity contained some fæcal matter. On further examination the cavity was found to open into the ileum about ten inches from its lower end by a clean cut perforation, one-third of an inch in diameter, in a Peyer's patch. In the same Peyer's patch was seen another small ulcer, and below this there were a dozen similar ulcers extending as low as the cæcum, in which two ulcers were found. All these ulcers were more or less circular; they had sharp edges and smooth floors. There was no notable enlargement of the mesenteric glands; the spleen was soft and slightly enlarged; the other organs were fairly healthy.

Sutliff, F. B. (Sacramento, Cal.): Catarrhal Pneumonia in Children with Reference to a Special Method of Treatment. (*Occidental Med. Times*, 1894, viii., 398.)

From experience during the past five years, he strongly recommends veratum viridi as almost a specific in catarrhal pneumonia in children. He gives the tincture in small but often repeated doses, until the pulse is reduced, respiration lowered, and the whole aspect of the case changed for the better. The dose is repeated every two or three hours, and varies from a fraction of a minim in infants to more for older children.

Francis, Richard P. (Montclair, N. J.): A Case of Pneumonia in an Infant Five Months Old Treated with Inhalation of Oxygen. (*N. Y. Med. Rec.*, 1894, xlvi., 109.)

On the thirteenth day of the disease the infant was in an apparently hopeless condition. Almost as soon as the stream of gas was allowed to enter the nostril the favorable effect was observed, and the child made a most satisfactory recovery, although the oxygen was not completely omitted for three days.

Farrar, Reginald: Death Following Vaccination. (*Brit. Med. Journ.*, 1894, ii., 807.)

This child was brought on October 10, 1893, for vaccination. She was rather small and thin for her age—five months—but otherwise had nothing obviously amiss. She was vaccinated in four places, using a carefully cleaned lancet, and Dr. Renner's calf lymph. Other children vaccinated at the same time, and from the same supply of lymph, did perfectly well in all respects.

On inspecting the arm a week later there were three vesicles of perfectly normal aspect ; neither at this, nor at any subsequent date, was there any inflammatory area around the vesicles ; nor did the ulceration at any time spread beyond their limits. Instead, however, of the scabs drying up and separating in the usual time they persisted unduly, and from the intermixture of clotted blood, presented a "limpet shell" aspect, resembling rupial scabs. When at last they separated the ulceration was found to have penetrated the whole skin, exposing the muscles beneath, and leaving holes which looked as if they had been punched out. There was no œdema of the arm, and the skin round the vesicles appeared perfectly healthy throughout.

The child "dwindled, peaked, and pined," and finally died, from no very obvious cause, on November 29, 1893, six months old, seven weeks after the vaccination, and about a week after the separation of the scabs.

He considers her death to have been due to a constitutional *malaise*, induced by vaccinia in a poorly nourished child ; for vaccinia is, after all, a specific constitutional fever, though most children take it very mildly ; and the case is published partly as a warning to vaccinators to avoid weakly children even though presenting no obvious disease, and partly because it is our duty to place on record any untoward effects of vaccination (and they are fortunately extremely rare, considering the universal prevalence of the custom), even at the risk of causing the enemy to blaspheme.

Hunter and Edington : Specimen of Pyelo-Nephritis, Dilated Ureters and Cystitis in a Child of Five Years. (*Glasgow Med. Journ.*, 1894, xlii., 131.)

The specimen was shown before the Glasgow Path. and Clinical Soc., and the following history given :

Since the age of eighteen months the child had complained of pain on micturition. This pain was referred to the glans penis, and was present only when passing urine.

He would often go for a whole day without micturating, but when this was so there was a dribbling away of the urine, so that his trousers were always wet. He wet the bed at night if he were lying on his back, but if he could be kept on his side he would go the whole night without passing urine.

State on Admission.—The bladder was noted to be distended, reaching nearly to the umbilicus. The prepuce was long and adherent, but not specially tight. On passing the sound the meatus was found to be narrow, having to be slit. No other urethral obstruction was found, and no stone in the bladder, Examination of urine showed it to be normal. During the first four days after admission the catheter was passed on five occasions, to relieve what seemed to be a distended bladder. On one occasion 10 oz. of urine were drawn off, but at others the bladder seemed to be emptied after 4 or 5 oz, had been withdrawn. In addition to what was withdrawn by the instrument, the child passed several times quantities of urine varying from 2 to 4 oz. The urine came slowly and often in drops. It was accompanied by pain, which was referred sometimes to root of penis and sometimes to glans. Again, the urine often dribbled away without the child making any effort.

On the seventh day the child was circumscribed. This same day there was complaint made of pain along the course of the ureters, and there was some tenderness on touching the lower part of the abdomen. Examination of the urine showed a considerable amount of albumen and a deposit which was found microscopically to consist of pus-cells.

On the following day the urine was smoky, and had a deposit of red blood-corpuscles, leucocytes, and large round fatty cells. The child did not seem so well, and complained more of pain in the abdomen. He was sounded again for stone, but none was found. The bladder was then washed out with warm boracic lotion. Toward evening he was very sick and vomited. There was no rigor. The temperature, which had hitherto been normal, began to rise, and next day the child died with a register of 105.4° F. (rectal).

Pathological Note.—*Kidneys* enlarged, measuring each 4 inches in length, soft and fluctuant, suggesting a cystic condition. The *ureters* were much distended, resembling loops of small intestine, and being in parts at least 1 inch in diameter. They were also convoluted, being apparently kept so by the peritoneum binding them to the posterior abdominal wall. Where ureter entered the bladder, and where it joined the pelvis, there was narrowing of its lumen, but no obstruction was present anywhere. Median longitudinal section of *kidneys* showed either organ to be the seat of dilatation of pelvis, with corresponding atrophy of the renal substance. The dilatation took the form of pouches, extending in some instances to near the surface of the organ. The cut surface showed in places a hæmorrhagic condition of both cortex and pyramids, with here and there purulent streaks in the line of the tubules. The capsule was found adherent in the neighborhood of the hæmorrhagic areas, and on being stripped showed raw and somewhat raised patches of a pale color. *Bladder* on being opened was found to have great thickening of wall, measuring at least half an inch. The rugæ of the mucous membrane were deeply injected with dark blood, suggesting extravasation. Ureteric orifices free. It contained some streaks of pus in bloody mucus.

The ureters and kidneys were distended with a bloody mucus, microscopic examination of which showed leucocytes, red corpuscles, mucous cells, and renal epithelium in a state of fatty change. Miscroscopic examination of sections of the renal tissue shows the appearances of suppurative nephritis.

Conclusions.—(1) The condition seems to have been that of hypertrophy of the bladder, with dilatation of ureters and pelves of kidneys due to obstruction, this being brought about by the narrow meatus directly, and by adherent foreskin reflexly (?); (2) septic infection from either the balanitis or urethritis, leading to infection of bladder, thence to the ureters, pelves, and kidney-substance.

School Boards and Vaccination.—A recent decision of the Supreme Court of the State of Pennsylvania has confirmed a decree of the lower court to the effect that a schoolboard has a right to exclude from the public schools children who have not been vaccinated.

Castor Oil.—The taste of the oil will be almost entirely destroyed, if mixed with equal parts of extract of malt. —*Gaillard's*, 1894, lix., 526.

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Original Communications.

DENTITION AS AN ETIOLOGICAL FACTOR IN THE MALADIES OF EARLY LIFE.*

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The influence of dentition as an etiological factor in the disorders of early life has from time to time been the subject of most vigorous and acrimonious discussion.

At the present day the subject is viewed from three different standpoints. There are those who still adhere, as tenaciously as do the laity, to the antiquated doctrine that dentition is a painful process, attended with much danger to the health and life of the child, and is both the immediate and remote cause of many of the maladies of early life.

Others hold that normal dentition in a healthy child does not give rise to local or general disturbance, but that, what they call difficult dentition is attended with local and constitutional discomfort, and may be the direct or indirect cause of disease, or may influence the course of an existing malady. There are still others who maintain that dentition being a physiological process should be, and is unaccompanied by any morbid manifestations that can rightly be attributed to it.

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* Read before the Hospital Graduates Club, November 22, 1894.

Too evidently, this is an important topic, important because of the incalculable harm that arises from making the teeth a scapegoat for a widely prevailing ignorance of the infant economy, and is deserving of better treatment than we can hope to give it here.

Among those who cherish an abiding faith in the etiological potentiality of dentition there has never been any unanimity of opinion as to its modus operandi.

It is said that dentition is more severe in the summer than in the winter and *vice versa*; that the cutting of the incisors, on account of their sharp edges, is more painful than the extrusion of the molars; that the eruption of the molars causes most pain because of their broad crowns; that the eye teeth, owing to their long fangs, are liable to give rise to cerebral disturbances; that the protrusion of the stomach teeth is likely to be attended with vomiting, diarrhœa and cough; that it is the evolution of the molars that causes most cerebral and intestinal troubles. Then, again, the forward pressure of the advancing tooth crown on the superimposed gum, the backward pressure of the fang on the subjacent parts, and the lateral pressure of all the teeth together are thought, by their respective advocates, to account for the many, so called, complicating ailments of dentition.

All are not agreed as to when dentition begins. The term dentition should embrace the whole period of dental evolution which commences at the sixth week of uterine life. It is, though, generally restricted to that period of development when the crown of the tooth is penetrating the superficial tissues of the gum. The glistening tooth crown then affords a tangible support for concomitant symptoms. Some, however, believe that the pernicious effects of pressure are discernible long before the tooth is about to show its enamel in the buccal cavity and consequently date its commencement at about the fourth month. Why not date it from birth? For at birth calcification of the crowns of the incisors is quite complete and the roots are beginning to calcify. Three months after birth the cuspid and molar crowns are complete and calcification then commences in their fangs. With the completion of the crown and beginning calcification of the fang the process of eruption commences.

That dentition is a physiological process, seems to be too often ignored. Like other physiological processes it is, of course, subject to irregularities from local and constitutional causes. Its affirmed etiological potency, however, may with good reason be questioned. It is true, functional derangements and constitutional maladies are more prevalent, and the mortality greater, between the ages of six months and two years, than at any other period of childhood, but, hereditary, dietetic, hygienic and educational influences furnish causes more rational and demonstrable than the presumed irritation of a hidden tooth germ. The eruption of a tooth represents a slow physiological growth and absorption. The tooth is not impelled forward as a spike is driven through leather, or a fœtal head forced through the pelvis. As the fang increases in length, by a slow development of soft cells and their subsequent calcification, the structures that lie in the path of the crown, the wall of the crypt, the submucous tissue and lastly the mucous membrane gradually disappear by absorption. While it is generally accepted that the absorption of the overlying structures is the result of mechanical pressure by the advancing tooth crown, still, if we consider all the facts in the case and reason from analogy we may not feel quite so sure of it. This interesting point may be illustrated by allusion to the fact that, not infrequently, absorption of the fang of a deciduous tooth commences on the side not approximated to the crown of its successor. And again, it is sometimes observed to commence at several points simultaneously. In the majority of cases, however, that part which lies nearest to the succeeding tooth will be the first to show signs of absorption. Again, in illustration of this point might be mentioned the growth of long bones. The bone increases in diameter by the formation of new tissue beneath and by the periosteum, and at the same time the medullary canal increases in calibre by absorption of its parietes. From this would it not be reasonable to suppose that absorption of gum tissue is caused by a particular process in the economy instead of by mechanical pressure? If such be the case the eruption of the teeth should no more beget morbid symptoms than does the growth of a long bone.

But, we are told by those who entertain unassailable convictions on the perturbing power of dentition, that drooling is the first indication of this process; that the infant will carry his hands to his mouth and bite on his fingers; that later on as a tooth approaches the surface of the gum he may become feverish, restless and fretful; that the bowels may become loose; that he may develop a cough; that convulsions may set in; that an eruption may break out; that one eye may become inflamed or an ear discharge; that if the mouth be examined at the time any of these symptoms appear, the gums will be found to be red, swollen, hot and painful.

What is the significance of some of these alleged symptoms of the eruption of the teeth?

Drooling is believed to be the result of a stimulation of the salivary glands by an irritation transmitted through the chorda tympani from the gums. It is said to "keep the gums soft, to relieve the congestion of the mouth and by deriving the blood from the brain to moderate its irritative condition."

Drooling usually commences between the third and fourth month and ceases before the fifteenth month. Sometimes it commences as early as the tenth week and, in children suffering with adenoids, may continue for several years. In sickly infants confined on their backs, drooling is not so noticeable for the saliva gravitates towards the pharynx and is swallowed. When the child is sitting up or lying on its side the saliva will flow out between the lips for the simple reason that he does not know enough to swallow it.

While the infant is nursed there is no demand for either teeth or saliva, still, the development of both the teeth and salivary glands must necessarily be well advanced towards completion at the period of weaning. Instead, then, of regarding this apparently copious flow of saliva as a manifestation of a morbid action of the salivary glands resulting from dental irritation, it could with good reason be assumed that it, like the eruption of the teeth, simply betokens a stage of developmental activity in which there is a preparation of the digestive apparatus for the reception and utilization of the aliment that is to succeed the maternal milk.

Rubbing of one jaw on the other and biting on the fingers or any substance that can be carried to the mouth are supposed to be indicative of a feeling of uneasiness, or itching, in the gums induced by the forward pressure of the teeth, and some smooth and hard material is recommended for the child to bite on for the purpose of allaying the pruritus and hastening the absorption of the superimposed gum.

"The principal impressions an infant obtains depend on his relation to food and drink; eating is the only real propensity an infant has, and the mouth is known by experience to be the great receptacle destined for the reception of everything around; not to speak of the lips being used as a means of touching, grasping, and learning the quality of things." The grinding of the teeth in children who have completed their first dentition is evidently, at times, due to some derangement of the economy. The biting motion of the jaw in infants, before and during dentition, may likewise be occasionally excited by some irritation, but not necessarily reflected from the gums. If there really be any sensation at all attending the eruption of a tooth, it probably amounts to nothing more than a moderate degree of pruritus. It should be remembered that muscular action is essential to muscular development; that a healthy child is in almost constant motion while awake, and that the masticatory movements may be, and probably are, but a part of the general gymnastics in which the child indulges. An infant cannot walk, neither can he masticate food, yet he exercises both the muscles of locomotion and those of mastication, developing and educating them for their respective functions when, at a later period of existence, these shall become necessary.

Feverishness, restlessness and fretfulness and disturbed sleep are the commonest manifestations of infantile derangements. Not infrequently, they are coincident with the eruption of one or more teeth. When such is the case, a superficial examination, and sad to relate, too often, it is, indeed, a superficial examination, may lead to the conclusion that a relationship exists between the two, whereas, a careful and thorough investigation will generally bring to light some associated condition which at another time would be considered quite adequate to produce these symptoms. If fever and general irritability be symptomatic of dentition, they should be present throughout its whole duration, or coincident with the eruption of each group of teeth, instead of appearing at uncertain times; and furthermore, they should be present, in at least a mild degree, in every child.

Slight disorders, presenting a few indefinite symptoms, occur at all ages, and the diagnostician is, now and then, at a loss to account satisfactorily for them. To rely solely upon the age of the patient in determining whether they shall be attributed to a physiological process or to some much more probable, or unknown cause seems illogical. Peripheral impressibility is very pronounced in the infant, particularly in one who is subject to an unnatural environment or whose powers of resistance are lessened by some constitutional vice, and any slight irritation, even though it be apparently too insignificant to immediately attract attention, may give rise to more or less fever and general uneasiness.

Very often, trifling disorders that are viewed as evidence of difficult dentition, are directly or indirectly dependent upon rachitis. This is one of the most common of children's maladies, and frequently a mild form of the trouble passes unrecognized because its symptoms have received a wrong interpretation. The local and general disturbances, in the estimation of the parents, and not infrequently in that of the family physician too, merely mark the dreaded teething epoch, the attending perils of which every infant is destined to encounter. The tardy dentition, lateness in walking, pigeon breast and box-shaped head with open fontanelles are regarded as harmless freaks of nature or perhaps family peculiarities. When rachitis is recognized, and it should be before any bone deformities are visible, and an appropriate line of treatment adopted, recovery generally follows; the teeth are cut rapidly, and owing to the extra care bestowed upon the child few, if any, of the ordinary derangements of early life occur.

The reputed diarrhœa from teething has been attributed to the swallowing of large quantities of saliva, to the absence of saliva in the stomach, and to the nervous irritation transmitted through the sympathetic nerves to the vagus, by their respective advocates. The erroneous doctrine that a mild diarrhœa is beneficial to teething children is responsible for a large annual sacrifice of infant life. Happily, this old and pernicious belief is being set aside, and it is to be hoped that ere many years it shall only be heard of as one of the dead superstitions of historical meddicine. Diarrhœa may occur at the time a tooth is protruding, or at successive periods of dental evolution, but as a matter of fact, never in consequence thereof. Children who are fed exclusively at the breast, at proper intervals, and whose hygiene receives careful attention seldom suffer with diarrhœa before the period of weaning. Then, again, diarrhœa is strikingly more prevalent in one season than in another, notwithstanding the eruption of the teeth at all periods. These two facts, of themselves, rather militate against the theoretical existence of diarrhœa from dental irritation. At the present day the recognized causes of intestinal derangements are improper feeding, bad hygiene and the changes produced in the atmosphere, especially in a city, by a high degree of solar heat. The most significant of these factors is improper feeding. Most babies at the breast are nursed too often. Bottle fed infants in addition to being fed too frequently, labor under the disadvantage of not being provided with a suitable substitute for their natural food. Too commonly, undue importance is attached to the appearance of the first tooth. Its presence is hailed as the beginning of a new era in the child's existence, and no opportunity is lost in putting the anxiously-watched-for organ to a legitimate use. Is it then, any wonder that the proverbial second summer has numerous pit-falls for the beginner in life and an untold dread for the ignorant parents?

The alleged tooth cough is by some accounted for by a saturation of the coverings of the chest by the secretions from the mouth with subsequent rapid evaporation. In the opinion of others, reflex action is an all-sufficient explanation. After a child has commenced creeping or walking he is more exposed to atmospheric changes and draughts than earlier in life. Hence, the greater frequency of attacks of bronchial catarrh during the second year. Rachitic and tubercular children are subject to recurring attacks of bronchitis, and the great prevalence of rachitis should not be overlooked.

Convulsions, varying in form from slight twitchings of particular groups of muscles to a general eclamptic attack are said to be a result of an irritation reflected from the gums. During the dentition epoch the whole organism is in a state of active development; the nervous system has not acquired the stability of equilibrium of the youth or the adult, and is therefore extremely susceptible to external impressions as is evidenced in the marked manifestations of disturbed function that are produced by what, in the more mature individual, would be considered trifling affairs. The etiology of convulsions is consequently much more extensive in infancy and childhood than later in life; and though, now and then, a general convulsion may occur, perhaps coincidently with the eruption of a tooth, or at successive periods of dental protrusion, it is questionable if there be any justification in attributing it to this process.

In the majority of cases convulsions are traceable to some irritation in the alimentary canal. Rachitic children are peculiarly liable to convulsions. In some cases the most painstaking examination fails to reveal the cause of the convulsion, and a careful and thorough autopsy may even be barren of results; so that it would be more in keeping with the logic of facts to acknowledge candidly that occasionally we are unable to determine the cause of a convulsion than to attribute it to some presumed cause for want of a more real one.

Redness, swelling, heat and pain in the gums are generally said to be indicative of a tooth erupting, more particularly in cases of so-called difficult dentition. It may seem strange and perhaps appear to savor of prejudice if we say that such has not been our experience. As a matter of fact the gums of a healthy child are of a pale pink hue. As the tooth approaches the surface the gum becomes paler, and judging from the amount of rubbing that is tolerated, is anything but sensitive. The pain and discomfort that, now and then, accompany the eruption of a wisdom tooth is cited as corroborative proof of the painful character of the first dentition. But, in reality, the one cannot be considered the analogue of the other. When the eruption of a wisdom tooth is painful it is because there is insufficient space at the back of the jaw, a result of imperfect development in early life, and as the crown of the tooth advances towards the surface, the overlaying gum is subjected to a traumatic pressure each time the jaw is closed, as in the act of biting, and a sometimes severe, gingivitis is the result.

Not infrequently the gum around the top of a tooth that is about to erupt is inflamed. This condition we have repeatedly seen follow attempts at "rubbing a tooth through" with a thimble, finger nail or other hard substance. Ulceration of the gum over a tooth, not infrequently, occurs from the impingement of a sharp corner of a corresponding tooth that has erupted in the opposite jaw. It is doubtful if dentition is ever the sole cause or, indeed, a cause at all, of a gingivitis. If the highly sensitive nerve-filament that forms a part of the pulp of a milk tooth becomes obliterated together with the substance of the fang, without pain or inflammation, to make way for its successor, it is not unphilosophical to infer that the less sensitive tissues that lie in the path of a deciduous tooth are disposed of in a manner as painless and as free from inflammatory action; for in both instances the same result, absorption of vitalized tissue, is achieved by processes that are, so far as the principle of action is concerned, identical. When stomatitis is present, some cause other than dentition should be sought. The vast majority of cases of stomatitis occur in bottle-fed children. The diet or hygiene may be at fault. The use of foul nursing nipples, dirty teething rings and filthy sugar-teats, thumb sucking and irritants taken into the mouth, as hot tea, drugs or substances that the child may pick up while wandering around on the floor, may give rise to stomatitis. Regarding gum lancing we only mention it to condemn it. It is not only unnecessary but useless. No tension is relieved for the incision does not gap. When symptoms are relieved it is either the result of blood-letting or a coincidence. Often it is imagination on the part of the operator.

Late Hereditary Syphilis.—Dr. Foster does not believe in what is often called late hereditary syphilis. He believes that in every case of inherited syphilis there are some symptoms during the first years of life, and in the vast majority of cases, nearly 90 per cent., before the third month. These symptoms are frequently very mild and frequently escape observation, and the disease may then remain quiet until about the age of puberty. The lesions most commonly met with are of the skin, the eyes and the bones.—*Northw. Lancet.* 1894, xiv., 449.

Infantile Insurance.—Judge Graham of Colorado has decided that the law prohibiting insurance companies from writing policies on the lives of children under ten years of age is unconstitutional and void. This order will be far reaching in its effets as there have been a large number of convictions for these offenses. The passage of the law was procured through the efforts of the Colorado Humane Society.

SOME PHYSIOLOGICAL FACTORS OF THE NEUROSES OF CHILDHOOD.

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(*Continued from page 17.*)

II.

Physiological Peculiarites of the Nervous System of Infancy and Childhood.

If we turn to our text-books on physiology or diseases of children to inquire into the peculiarities of the nervous system of infancy and childhood we will close them with the feeling that very little is known of this important subject. While unfortunately this conclusion is for the most part true, yet we are not so wholly devoid of knowledge on this subject as our text-books might lead us to infer. We have at least some knowledge of a few of the physiological peculiarities of the immature nervous system of the child that have a most important etiological import in the study of the neuroses of childhood and it is my purpose here to outline such of these peculiarities as I believe to have a bearing on neurotic disease. At birth the brain is morphologically and functionally the most immature of all the great organs of the body. From birth up to seven years of age it develops enormously in weight, in structure and in function. At this time the brain has attained 90 per cent. of its maximum weight (Boyd), and after this slowly increases in weight up to the age of eighteen, but increase of function does not keep pace with increase of weight, the brain of a child of eight is almost as large as the brain of an adult but as Clouston aptly says, "the difference between what the brain of a child of eight and the brain of a man of twenty-five can do and can resist is quite indescribable. The organ at these two periods might belong to two different species of animals so far as its essential qualities go." While the rapid increase in weight of the brain does not continue after the seventh year, the rapid increase in the brain's functional development goes on and still continues long after the brain at eighteen has reached its maximum weight. Clouston says "the unique fact about the nerve cell is the extreme slowness with which it develops function after its full bulk has been attained." "In this it differs from any and every other tissue." "We may say that after most of the nerve cells of the brain have attained their proper shape and full size it takes them the enormous time of 18 or 19 years to attain such functional perfection as they are to arrive at." It is an important fact that should always be kept in mind that the entire nervous system of the normal infant and child is constantly undergoing structural and functional development, and that the structural development, so far as we are now able to judge by our instruments of precision, is much more rapid than is the development of function. It is also a fact that even with normal children, this development of structure and function does not always go on with the same rapidity, nor does it always follow a regular order in its development. It is quite within the limits of health that certain functions may be rapidly developed and that other functions may be unusually retarded in development. The innumerable conditions of heredity and environment have their influence on the nervous system of the child in developing and retarding both structure and function, and this interference with the order of development is not an abnormal condition if within a reasonable time the delayed functions reach a normal state of development But it is not my purpose to enter deeply into this phase of my subject. I only wish here to call attention to the following important facts :

1st. At birth the nervous system is structurally but more especially functionally immature.

2d. Throughout infancy and the earlier years of childhood the brain normally undergoes rapid structural development.

3d. Throughout the entire period of infancy and childhood the brain normally undergoes rapid functional development.

4th. Innumerable conditions of heredity and environment have much to do with the rapidity and the order of development of the functions of the nervous system of the normal child, as well as with the failure and retardation of their development in the abnormal child.

5th. The metabolism in the normal immature nerve cell of the child must be rapid enough not only to supply the functional waste, but also to supply the material for the growth and development of cells.

6th. This structural instability of the functionally weak and immature nerve cell of the child makes it much more irritable and excitable than the stable mature nerve cell of the adult.

With these general considerations of some of the functional peculiarities of the nervous system of childhood, let us pass to the consideration of certain special functions of the nervous system, which are not the same in childhood as in adult life.

The feeble inhibition of nerve energy is from a clinical standpoint the most important physiological peculiarity of the nervous system of infancy and childhood. The inhibitory function of the nerve cell is the last to be developed; the cell first acquires the function of generating energy, then the function of discharging energy and lastly the function of inhibiting or co-ordinating energy. These functions of the cells are developed in the order in which they are needed. Until energy is generated there can be no occasion for a discharging function and until energy is discharged there can be no occasion for an inhibiting function. *Feeble inhibition* is therefore one of the physiological characteristics of the immature nervous system of infancy and childhood, and it plays a most important role as a predisposing factor of the neuroses of childhood. Otto Soltsman noted that inhibition was very feeble in young animals and that it became stronger as the animal got older. The inhibitory function of cells is therefore in this regard like the generating function it gradually becomes stronger as the cells get older up to the time when they reach their complete functional development. But it must be remembered that the inhibitory function of a cell is always developed later than that function of the cell which generates the force which is to be inhibited. In the normal order of things the function of inhibition should closely follow the development of the function which generates the force to be inhibited.

The inhibitory mechanism which controls the discharge of nerve force that regulates such vital processes as the action of the heart and the lungs are fairly well developed at birth, while those that regulate reflex phenomena are slowly developed during infancy and early childhood, and voluntary inhibition of motor and *mental* force does not find its complete development till long after childhood has passed. The late development of the function of inhibition is a fact of prime importance from a clinical standpoint because this is the last function of the cell to develop and is the one that is most likely to be still further retarded in development by unfavorable conditions of heredity and environment. *It is therefore the abnormally feeble inhibition which occurs in the abnormal child that is such a potent factor in the production of neurotic disease in infancy and childhood.* It is my belief that this functional immaturity of the inhibitory centres is most important in explaining the manner in which childhood acts as a predisposing cause of such reflex neuroses as convulsions and incontinence of urine. It is evident that this cause most potent at birth, gradually grows less as the child grows older. This is especially true of voluntary inhibition. At birth voluntary inhibition if it exists at all must be very feeble, and it gradually grows stronger as the higher functions of the brain are more and more developed. We have a good example of voluntary inhibition in the influence of the will over urination. One wills to urinate and the impulse passes down the cord to the lumbar centre that presides over urination and it is there translated into the reflex act of micturition or on the other hand one wills not to urinate and the impulse travels down the cord to the lumbar centre and the act of urination is inhibited.

But the functional immaturity of the *involuntary* centres is of even more importance to us as clinicians than the voluntary, for these centres have most to do with co-ordinating and regulating spinal reflex movements, the lack of inhibition on the part of these centres would make it possible for an overflow of spinal reflex movements to occur and in this way predispose to such convulsive disorders as eclampsia, chorea, and epilepsy. As previously noted the reflex discharge of energy from the spinal motor cells occurs normally through the paths of least resistance, that is in the same plane and on the same side, or in the same plane and on the opposite side of the cord from where the nerve fibre entered that carried the afferent stimulus. But if the resistance to the spreading of the reflexes up and down the cord be reduced or if the exciting stimulus be increased then we may have an overflow of energy up and down the cord exciting general spinal reflex movements. As above stated these spinal reflex movements are inhibited and an "overflow" of energy prevented by the action of involuntary inhibitory centres higher up in the cord, the medulla oblongata and the brain. The normally feeble inhibition of infancy predisposes to such an "overflow" of spinal reflexes or in other words to convulsive disorders of all muscles operated through spinal motor nerves. It is also easy to understand how unfavorable circumstances of environment and heredity having their greatest retarding influence on the development of the inhibitory function of the immature nerve cells of the infant and child would still further predispose to overflow of spinal reflexes and in this way to convulsive disorders. By this *overflow* of energy we may have a large number of spinal reflex movements as the result of a single exciting stimulus. Extensive convulsive movements of almost the entire body may in this way be caused by some simple discharging stimulus. It is one of the functions of the reflex inhibiting mechanisms to prevent this overflow, so that an impulse sent to one portion of the cord may not overflow and spread to other portions of the cord, but the mechanism being inefficient the inco-ordinated and spasmodic muscular movements occur. This overflow of nerve force is not peculiar to spinal cells exhibiting motor energy, but it also occurs in the cortical cells exhibiting mental energy (insanity). An inhibition against this overflow is quite as important in the brain cortex as in the spinal cord.

It is of clinical importance that we should here note that not only are the reflex centres in the gray or sensory portion of the cord, but the conducting fibres by which reflex movements overflow and spread up or down the cord are also in the sensory tract of the cord for this gives us a partial explanation of how certain drugs such as cimicifuga, the bromides, antipyrin, and gelsemium, by depressing the sensory tracts of the cord can control reflex spinal movements. But it must be remembered that these drugs given in this way are given to relieve symptoms and do not have a curative influence by removing the cause of the disease. In this connection I may quote Lauder Brunton, who says that "spasm is as a rule due to diminished action of the co-ordinating or inhibitory centres, rather than to excess of action in the motor centres," and "those drugs which *stimulate* the circulation and increase the nutrition of the higher nerve centres and the co-ordinating power tend to prevent spasm." In this we have an explanation of the benefit derived from nitroglycerine in certain nervous conditions where the circulation is feeble and the malnutrition great.

In the light of the influence of feeble inhibition as a factor in the production of spasm and other neuroses, one notorious fact demands explanation, and that is that the first half year of life, when inhibition is most feeble, convulsive disorders are least frequent. There are a number of reasons why this is so. The most important is that the motor areas of newly born animals are not so sensitive and do not so readily respond to reflex or direct irritation as in older animals. Another reason is that the nervous system of the nursing child is not so frequently excited by reflex or direct irritants as the child that is fed on a mixed diet.

Lack of sensitiveness of the motor areas of newly born animals has an important bearing on the study of reflex neuroses. The motor areas of the nervous system of the newly born do not respond to electrical or other stimuli as readily as in older animals. Purely reflex neuroses are therefore very uncommon in the very young infant. There is at this time in life very little need for the inhibitory control of spinal reflex acts by higher nerve centres, because the spinal reflex centres are so functionally immature that we get but a minimum reflex from a maximum excitation. The feeble inhibition of early infancy is for this reason not so potent a factor in producing disease as it is a little later on, when inhibition is found not to have kept place with the development of cell excitability. The reflex centres very early in life take on their normal irritability while the inhibitory function is very slow in reaching full development. In this way feeble inhibition comes to play an important role in the production of the neuroses of childhood. This lack of sensitiveness of motor centres in the young infant has yet another important bearing, since it is in great part responsible for the *lack of tone* of the sphincter muscles of the infant.

I have previously noted that the muscular tone of the sphincters was maintained by an automatic function of the central nervous system, so closely analagous to reflex action that it seems a difference of name rather than of function. Now these reflex or automatic functions of the cord are so immature in the newly born that there is a lack of tone of all sphincter muscles, that is to say an absence of the normal amount of contraction which afterward fits them for the purposes they are to serve, and which depends in great part upon the action of normal reflex centres in the cord. This lack of sensitiveness of the reflex centres of the cord in the infant is in my opinion, a most important factor in producing the incontinence which is characteristic of infantile sphincters. The incontinence of infantile sphincters passes away with the functional development of the centres whose function it is to maintain in them the normal amount of muscular tone that fits them for the purposes they are to serve. Abnormal conditions of heredity and environment may much delay the functional development of these centres and for this reason a complete or partial incontinence may continue long after the period when it should normally disappear. During this period, when involuntary inhibition is so feeble, voluntary inhibition is of great service in preventing, as it usually does, the diurnal incontinence. But at night when the will is asleep a minimum reflex will overcome the feeble involuntary inhibition and cause a relaxation of the sphincters. Besides this any abnormal conditions of heredity or environment which increase the irritability of these reflex centres will also make it possible for slight reflex causes to disturb the "muscular tone" of sphincters and cause either spasmodic stricture or incontinence. The pathological conditions therefore which produce feeble inhibition and excitable nerve centres are sufficient explanation, for the not infrequent condition of incontinence of sphincters during childhood, and it is not necessary to invoke a cause which does not as a rule exist, viz., insufficient muscular development.

(*To be continued.*)

Insomnia of Children.—Dr. A. Claus recommends trional in doses of 0.2 to 1.5 gm., according to the age of patient. It should be given before retiring, and may be administered in warm milk or even better in confection or honey.—*La Flaud. Med.*, Oct. 28, *1*894.

Preparations for Supplying Diphtheria Antitoxin.—The Massachusetts State Board of Health has several horses already under inoculation with the diphtheria toxin, and expects ultimately to be in a position to supply considerable quantities of the antitoxin. Suitable horses can be obtained for a very small price. The Boston Board of Health is also getting ready to furnish a supply to the public institutions of the city.—*Boston M. & S. Journ.*, 1894, cxxxi., 625.

A REPORT OF TWENTY-TWO CASES OF INTUBATION OF THE LARYNX.

BY GEORGE BIESER, M.D.

New York.

Since January, 1893, I have intubated twenty-two cases of diphtheritic or membranous laryngitis, of which eight, or thirty-six per cent. recovered; in addition to these cases given below, I saw two patients who most certainly needed intubation, but who died without operation because their parents refused permission. As these two needed intubation just as urgently as did the others, it is only fait in determining the value of the operation in my list of cases to include them in the list; this gives a more accurate recovery list of eight in twenty-four, or only thirty-three per cent. In this way alone can the efficacy of any operation be tested. Of these two cases one occurred in the practice of Dr. J. Henry Fruitnight, the other in my own practice.

Besides these cases I have seen or been consulted in regard to four cases of laryngeal diphtheria, all of which recovered without operation, two in my own practice, and one each in the practice of Dr. J. Henry Fruitnight and Dr. Augustus E. Bieser. Appended is the list of cases:

This operation was not done unless absolutely necessary; most of the cases that died were either hopelessly septic or developed heart failure, or had some other severe complication, as secondary pneumonia, scarlet fever or measles. This operation can only relieve the laryngeal obstruction and the train of symptoms dependent upon this condition; it cannot cure the diphtheria itself, nor prevent secondary pneumonia, nor restore the degenerated heart muscle; all these conditions must be separately met and treated as if no laryngeal stenosis ex-

TABLE OF CASES OF INTUBATION.

No.	Date.	In Practice of	Sex	Age	Duration of Diphtheria.	Duration of the Laryngeal Symptoms.	Causes of Death	Complications	Results.
	1893								
1	Jan.	J. Henry Fruitnight & A. E. Bieser	Male	3 yrs 1 mo.	4 days	1½ days.	Sudden Heart Failure.		Died 15 hrs after intubation.
2	Feb.	J. Henry Fruitnight	Female.	1 yr 11 mos.	4 days	1 day	Sudden Heart Failure.		Died 1 day 17 hrs. after intubation.
3	Feb.	J. Henry Fruitnight	Female.	3 yrs 5 mos.	3 days	½ day	Extension	Sepsis	Died 21 hrs. after intubation.
4	Feb.	J. Henry Fruitnight	Male	3 yrs 1 mo.	Present	1 day	Extension & Pneumonia	Sepsis & Pneumonia.	Died 1 day 19 hrs. after intubation.
5	July.	J. Henry Fruitnight	Female.	3 yrs 10 mos.	6 days	1 day			Recovered; wore tube 6 days 16 hrs.
6	Sept.	My Own	Female	2 yrs	5 days	1 day	Sudden Heart Failure.		Died 4½ hrs. after intubation.
7	Nov.	J. Henry Fruitnight	Male	4 yrs 4 mos.	Present	1½ days.			Recovered; wore tube 5 days 19 hrs.
8	Dec.	J. Henry Fruitnight	Male	5 yrs 3 mos.	Not Present	1½ days.			Recovered; wore tube 5 days 14 hrs.
	1894								
9	Jan.	J. Henry Fruitnight & M. Molner.	Male	5 yrs 8 mos.	Not Present	3 days	Pneumonia	Sepsis & Pneumonia.	Died 8 hrs. after intubation.
10	Jan.	J. Henry Fruitnight	Female.	3 yrs 2 mos.	Present	1 day			Recovered: wore tube 6 days.
11	Jan.	J. Henry Fruitnight	Male	5 yrs 1 mo	5 days	6 hours.			Recovered: wore tube 5½ days.
12	April.	J. Henry Fruitnight	Male	2 yrs 5 mos.	4 days	1½ days.	Sepsis	Scarlet Fever	Died 20 hrs. after intubation.
13	May.	J. Henry Fruitnight	Male	5 yrs 9 mos.	Not Present	1 day	Sudden Heart Failure.	Measles	Died 16 hrs. after intubation.
14	May.	J. Henry Fruitnight.	Male	6 yrs 10 mos.	5 days	3 days			Recovered; wore tube 5 days 8 hrs.
15	June.	J. Henry Fruitnight & A. E. Bieser.	Female.	6 yrs 8 mos.	4 days	4½ days.			Recovered; wore tube 5 days 22 hrs.
16	June.	J. Henry Fruitnight.	Female.	21 mos	1 week	3½ days.	Exhaustion		Died 4½ hrs. after intubation.
17	July.	T. Kelly & J. F. Cremin	Female.	2 yrs 7 mos.	1 week	1 day	Sepsis	Scarlet Fever	Died ½ hr. after intubation.
18	July.	Dillon Brown & J. B. Kennedy.	Male	3 yrs	4 days	1 day	Extension		Died 7½ days after intubation.
19	Aug.	C. H. Holman	Male	3 yrs 6 mos.	Not Present	5 days			Recovered; wore tube 6 days 11 hrs.
20	Aug.	Leo Rosenberg	Male	4 yrs	Present	1 day	Ex. & Slow Heart Fail.		Died 9 days 4 hrs after intubation.
21	Aug.	E. R. Duffy.	Male	3 yrs 1 mo.	7 days	2 days	Slow Heart Failure	Sepsis	Died 8 days 6 hrs. after intubation.
22	Aug.	B. G. Strong	Male	4 yrs	7 days	5 days	Extension	Sepsis	Died 3½ days after intubation.

isted. Therefore, in presenting this report I wish to call attention not only to the relief of the laryngeal stenosis, but also to the treatment of the other dangerous symptoms of diphtheria.

The chief dangers in laryngeal diphtheria are:

1. Suffocation. 2. Heart Failure. 3. Sepsis. 4. Too Much Local Treatment.

1. Suffocation. The asphyxia from the mechanical stenosis may best be met in three ways: A. Intubation. B. Tracheotomy. C. Calomel fumigations.

(*a*) Intubation: As in ligature of the common carotid artery we have an inferior carotid triangle or triangle of necessity, in which we must tie the artery, if the superior carotid triangle or triangle of election is inaccessible, so, in an analagous manner, we have in tracheotomy an operation of necessity which we must resort to in case intubation becomes impracticable or fails to relieve the laryngeal stenosis. What the ligature of the carotid artery in the superior carotid triangle is to the ligature of the same artery in the inferior triangle, that is intubation to tracheotomy—the operation of election *versus* the operation of necessity. I would make intubation the operation of election for the following excellent reasons:

1. It is the simpler and more rapid of the two.
2. It is more readily accepted by the parents.
3. It requires no special assistance; can be done under any surroundings, at any hour of day or night and without any special preparation.
4. It requires no anæsthetic.
5. It causes less shock and hemorrhage when properly done.
6. It allows of more efficient coughing than does tracheotomy—a point of prime importance when we reflect that efficient coughing is one of nature's methods of draining the air passages of inflammatory products.
7. The after treatment is decidedly simpler, and the convalescence more rapid than in tracheotomy.
8. There is no cicatrix nor fistula left—an important point in females.

9. There is less likelihood of secondary pneumonia if the nose and throat are properly, not too energetically treated.

10. Intubation gives a larger per centage of recoveries.

(*b*) Tracheotomy: Tracheotomy, or what I would call the operation of necessity has its indications. There are cases where intubation must give way to tracheotomy. A case in point is the one described by Dr. F. Huber before the American Pediatric Society at Boston, in May, 1892. After intubation he found that a cast, afterwards coughed up, lining the larynx, trachea and bronchi collapsed, and acting as a valve below the tube, threatened the immediate suffocation of the child; after removal of the tube the above cast was coughed up and the child for the time being relieved; but it reformed, as was shown by the now increasing dyspnœa, and in spite of tracheotomy, which obviously was now the operation to be performed, the child died. Such cases, however, are rare. In all other cases in which the membrane blocks the larynx and upper trachea only, intubation relieves the stress equally as well as does tracheotomy.

(*c*) Calomel Fumigations. Four of my cases recovered without operation under the use of calomel fumigations; the dyspnœa, in two of the cases so severe that I was prepared to intubate, improved rapidly under the use of 20-40 gr. of calomel every one or two hours. For the method of employment of the calomel, see Dr. Dillon Brown's excellent treatise in the *Medical News* of May 12, 1894. If this method of treatment fails, you can fall back upon intubation.

2. *Cardiac Failure:* This may be gradual or sudden; it may be functional, or organic. It is dependant either upon paralysis of the vagi or upon an organic change in the heart—an acute degeneration of the heart muscle. Hence the first thing to do in every diphtheria is to put this weakened heart at rest, and thus give it the least possible work to do. The only way is to put the patient in bed. By absolute rest in bed I mean that the child is to be fed, is to get its medicine, and if possible, is

to have all its wants attended to in bed. In short, let the child alone as much as possible. A tube may remove a stenosis, but an ocean of stimulants may not be able to overcome a heart failure which has once begun. Why is it that the heart failures in diphtheria usually occur just after struggles on the part of the child to resist the application of local remedies to the throat, or after getting up out of bed? A word to the wise is sufficient. If the child must be taken out of bed, it might be wise to give a stimulant before and after allowing this. Another prophylactic against heart failure is the early administration of alcohol; do not be afraid of over stimulating. Give ℥ss. to ℥iv. daily, doubling the dose if the pulse remains weak.

3. *Sepsis*: In children who do not resist, it might be wise to irrigate the nose and throat with normal salt solution or use sprays of various kinds; for here you will inflict no damage. But if the child resists or struggles, these plans of treatment had better be discarded. Is there no other way of limiting the sepsis of diphtheria than by energetically attacking the dead membrane in the throat? Most certainly there is. We can in such cases get a very good local as well as general disinfectant effect with drugs by making use of the simple physiological principle of *swallowing*. Swallowing is more efficacious than all the ordinary sprays and gargles, because the object swallowed reaches regions that they will not reach. Why not discard them then? Why swab out or cauterize the throats of struggling children and thus start up new foci of infection? In iron, chlorate of potash, bichloride of mercury and calomel, we have remedies that can and do cause local and general disinfectant effects, provided they are properly given. Let the child swallow every fifteen minutes two drops of the tincture of the chloride of iron, giving one to two drachms daily; combine with each dose of iron one-half to one grain of chlorate of potash, giving about one-half drachm in twenty-four hours, remembering that this remedy may be poisonous in large doses.

Then in addition to these local and general remedies, you may give hourly doses of $^1/_{60}$ to $^1/_{40}$ gr. of bichloride of mercury. This is the best local and general disinfectant that we have in diphtheria and the one with which in addition to hourly calomel fumigations I have obtained the best results. These remedies accomplish their object with the least possible exertion on the part of the patient.

4. *Too Much Local Treatment*: This topic has been sufficiently discussed under the previous headings. If a doctor should leave the throat alone, how much more important is it for parents to do so?

Summary:

1. Relieve the stenosis by the tube or by calomel fumigation.

2. Guard against heart failure by resorting to the two great prophylactic agents; (*a*) absolute rest in bed; (*b*) the early use of alcohol.

3. If the child does not struggle you may gently irrigate or spray the throat and nares; if the child does struggle, and the majority of children do, discard the sprays and irrigations and try to limit the sepsis by the local and general disinfectant effects of the internal use of mercury, iron and chlorate of potash.

4. It might be wise to give stimulants before and after the removal of the tube.

Diphtheria Antitoxin in New York.—Aronson's, Behring's and Gibier's can be obtained from Lehn & Fink, 128 William street; Behring's from Schulze-Berge and Koechl, 79 Murray street; Gibier's from the New York Pasteur Institute. Roux's cannot be obtained, as the Government reserves all of it for use in France. The antitoxin prepared by the New York Board of Health is available for New York City, and can be obtained only on condition that the serum is administered by a representative of the Board of Health. Several other laboratories are nearly ready to furnish their antitoxin, and before long the market will be flooded with this product, so prematurely made famous by the newspapers.

Clinical Memoranda.

CASE OF SPORADIC CRETINISM (INFANTILE MYXŒDEMA) TREATED SUCCESSFULLY WITH THYROID EXTRACT.

BY WILLIAM OSLER, M.D.

Professor of Medicine, Johns Hopkins University.

In my paper upon sporadic cretinism in America, read before the Association of American Physicians, in May 1893, I reported three cases of this disorder. One of these which had been under Dr. Booker's observation, subsequently passed out of sight. The other cases have been treated with the thyroid extract. In the girl aged nineteen the treatment has not been very systematically carried out by the patients, and the condition has not materially improved.

In the third case the results have been truly remarkable. I give the notes in full from the American Journal of Medical Sciences, Nov., 1893.

M., aged two years and three months, was brought to me first from the Eastern Shore of Maryland, January 10, 1892. The parents (first cousins) are healthy and strong. No hereditary ailments on either side; no members of the family have had goitre. The patient was the second child; the labor was easy, and she throve well. Nothing special was noticed about the child until the end of the first year, when it was suspected something might be wrong, as she had not cut her teeth, and did not attempt to walk or to talk. Throughout her second year she grew fairly well, but had several attacks of slight fever, and did not develop as other children, making no attempts to crawl or to walk, and seemed unnaturally quiet and dull. She did not cut the incisor teeth until she was nearly two years old. Within the past six months she has changed remarkably in color, has become very pale and waxy, and the face and limbs seem puffy and swollen. She has taken milk well, and has developed a little mentally; smiles, and attempts to repeat her own name when it is said, and has learned to say "mamma" and "papa."

Present Condition.—Under-sized child for her age. Aspect is very striking; color pale; face, very broad across; the mouth is open; tongue protrudes, and is evidently enlarged; the lips are full and heavy; the cheeks very large, almost pendulous; the hair is almost straight; the eyes are blue; the sclerotics very pale; the eyelids glossy and infiltrated. The forehead is large, not badly shaped; the head well formed, rather prominent behind; the anterior fontanelle is not quite closed. She looks good-tempered, but takes very little notice, and smiles in a feeble way. The facial aspect is that of a cretinoid idiot. The muscles of the arms are feebly developed; the subcutaneous tissues are much infiltrated; the hands are swollen and glossy—not tense, and look œdematous, but the infiltration is firm, and only yields on prolonged pressure. The legs look large; the thighs present several folds; the skin looks glossy, and the subcutaneous tissues are much infiltrated. The skin over the dorsal portion of the feet is very glossy and tense, and on firm pressure pits with distinctness. The abdomen is distended and the superficial veins prominent. Palpation is negative; the edge of the liver is palpable about six cm. below the costal margin. The edge of the spleen is not palpable, nor does the organ appear to be enlarged. The thorax is well formed; no trace of rickety enlargement of the ends of the ribs; no evidences of rickets in the long bones. The apex-beat of the heart is just within the nipple line. There is a systolic murmur with the first sound, which is loud and intense at the pulmonary cartilage; the breath sounds are clear. There is no enlargement of the superficial lymphatic glands; the thyroid gland is not enlarged; the cricoid cartilage can be well felt, as can also the entire trachea as low as the sternum, and it can be taken between the two fingers quite plainly. Dr. Halsted thought he could feel the thyroid beneath the sterno-mastoid muscle. The percussion note on the first bone of the sternum is clear. The examination of the blood showed a moderate increase of leucocytes and some irregularity in the size of the red blood-corpuscles.

The condition was diagnosed sporadic cretinism. As it was evident that the blood condition of the child was very much below par, she was ordered the syrup of the iodide of iron.

March 1, 1893.—Patient brought again to-day. In the year and two months which have elapsed since I saw the child she has improved remarkably. She is now three-and-a-half years old. Her height is 75 cm. She looks more intelligent, takes more notice, and the facial expression is decidedly brighter. She tries to say a few words, and has begun to walk with a little assistance. The most striking changes are the disappearance in great part of the anæmia and lessening of the firm subcutaneous œdema which was so marked a feature. She still has a little infiltration about the eyelids and cheeks. The limbs also look full, and they are firm. The skin is a little glossy over the hands and feet. The tongue does not protrude so often from the mouth, though when the face is in repose it is frequently seen protruding slightly. The face looks broad and full, and the expression and aspect are still cretinoid; head is 51.5 cm. in circumference, the abdomen 54.5 cm. The neck is thick and short, and presents a large tranverse fold of fat. The thyroid gland is not palpable, and below the thyroid cartilage the trachea can be felt with the greatest distinctness and grasped between the fingers down to the sternum.

Treatment with the thyroid extract was begun in March 1893. At first Dr. Hewetson, one of my assistants, who superintended the treatment of the case, prepared the glycerine extract, and the child took an amount corresponding to about a quarter of the gland in the twenty-four hours. This she took throughout the summer and autumn, but for the past four or five months she has been taking the dessicated gland.

The child was brought to me on April 28, 1894. The change has been of an extraordinary character, and is manifest: first, in entire loss of the cretinoid aspect; the color is good, the nutrition evidently very much improved, the flesh firm and solid; second, she has begun to develop rapidly, and in the fourteen months which have elapsed since the last measurements she has grown four inches in height; third, she now walks and runs about everywhere; and fourth, the mental development has been proportionately striking. Fourteen months ago, though she would try to say a few words, her vocabulary was confined to mamma and papa, but she now talks clearly, and says almost everything.

No one meeting the child for the first time would have any idea that there was anything peculiar about her, though she is, of course, still undersized, undeveloped and does not talk so plainly as a child of four years and eight months.

The case adds another to those in which beneficial effects have followed the administration of the thyroid extract in infantile myxœdema.

Oct. 1894.—The improvement in this case continues. I saw the patient again in July. She is a very bright active child, in whom no one would notice that there had been anything wrong, and in whom no one would notice anything amiss except, perhaps, that she does not talk as plainly as a child should at her age.

Prophylaxis of Diphtheria by Antitoxin.—At the Mt. Vernon branch of the New York Infant Asylum, a bacteriological examination was made of the pharynx of *all* the children. The throats of nearly a hundred of the apparently well ones contained the Loeffler bacillus, and it was found that all the new cases of diphtheria developed in these children. Therefore sixty of them, all apparently in good health, were isolated, and thirty of them received a morning and evening naso-pharyngeal douche of normal salt solution, and thirty of them received in addition to this an immunity dose of Behring's antitoxin (150 units), which was obtained from the New York City Health Board.

Of the series without antitoxin none developed diphtheria.

Of the series with antitoxin, one, a boy, aged five years, developed diphtheria, as a complication of a lobar pneumonia, about five weeks after the injection of the serum.

The Priority of the Discovery of Antitoxin.—Professor Jaime Ferran, of Barcelona, has called the attention of the editors of the *Deutsche Medicinische Wochenschrift* to a paper by him entitled "Nota sobre la vacunacion contra el envenenamiento difterico agudo experimental," bearing date April, 1890, in which a safe and practical method of immunizing animals against fatal doses of the diphtheria poison, successfully employed by him, is described. On the basis of this publication, which appeared eight months before Professor Karl Fraenkel's communication on the same subject, Dr. Ferran claims the priority of the discovery. The Spanish bacteriologist's claim, together with the *pièces justificatives*, having been submitted to Professor Karl Fraenkel, has been frankly acknowledged by him to be well founded.—*Med. Record*, 1895, xlvii., 85.

ENLARGED THYMUS GLAND; CONVULSIONS; DEATH.

BY SAMUEL K. BREMNER, M.D.

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M. G., aged ten weeks, inmate of New York Infant Asylum, was a plump, breast-fed child, and never sick an hour. Apparently as well as usual up to midnight of the 23d, when suddenly taken with slight twitchings of mouth and face, followed by general convulsions. Convulsions were severe and continued. Treatment of no avail, and child died about two hours after attack began.

Autopsy.—General condition plump. Brain—Moderately congested and sinuses filled with fluid blood. Thymus gland—enlarged and extending down over pericardium. Weight—six drachms. Heart, lungs, spleen, liver, kidneys, stomach and intestines are normal.

After Effects of Antitoxin.—Five cases are reported, two from Berlin, two from Frankfort and one from New York, in which the after effects of the antitoxin were rather serious and unpleasant Although all of the cases recovered, such an attack might be a most serious complication in a child already weakened by diphtheria.

Fast Living.—The most remarkable instance of rapid growth is said to be recorded by the French Academy in 1729. It was a boy six years of age, five feet six inches in height. At the age of five his voice changed, at six his beard had grown, and he appeared a man of thirty. He possessed great physical strength, and could easily lift to his shoulders and carry bags of grain weighing two hundred pounds. His decline was as rapid as his growth. At eight his hair and beard were gray; at ten he tottered in his walk, his teeth fell out, and his hands became palsied; at twelve he died with every outward sign of extreme old age.—*Times and Register.*—*Record*, 1895, xlvii., 87.

CONICAL STUMP.—REPORT OF TWO CASES.

BY HOWARD LILIENTHAL, M.D.,

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So little is known concerning the etiology of this curious sequela of certain amputations through the diaphysis of the long bones in children that it is worth while reporting each case with any observations which may have been made.

Case I.—In July, 1892, H. P. came to my clinic at Mount Sinai Hospital out-patient department for the relief of pain in the stump of the right humerus amputated in its upper third eight years before. He was a well nourished but nervous Polish Jew twenty years old. He had no particular occupation. The amputation had been performed for a compound fracture with crushing of the soft parts and was followed by slow healing. (Necrosis of bone ?) For about four years there was no pain in the stump but then pain began and gradually increased up to date of his consultation. I found a very tender, tense and ulcerated cicatrix with the end of the bony stump directly beneath the excoriated skin. Under ether I did a re-amputation removing about two inches of bone and leaving ample flap tissue. Prompt recovery followed healing by first intention. The bone which was removed was barely three quarters of an inch in diameter and the medullary canal extended quite to the extremity.

Case II.—Ida G., three years old, was first seen by me in private practice January 30, 1889. She was a well nourished healthy child of healthy parents. Her right leg had been amputated in its lower third for compound fracture of the foot with septic infection. A sinus at the tip of the stump led through the scar to a loose piece of bare bone which I intended to remove. It was later done by Dr. A. G. Gerster, of New York. The child remained well and walked nicely with a Mark's artificial leg until June, 1894, when there began to be pain in the scar. On September 6, 1894, I again saw the child now a sturdy little girl of eight. She still used the artificial leg in spite of the painful conical stump. The condition is well shown

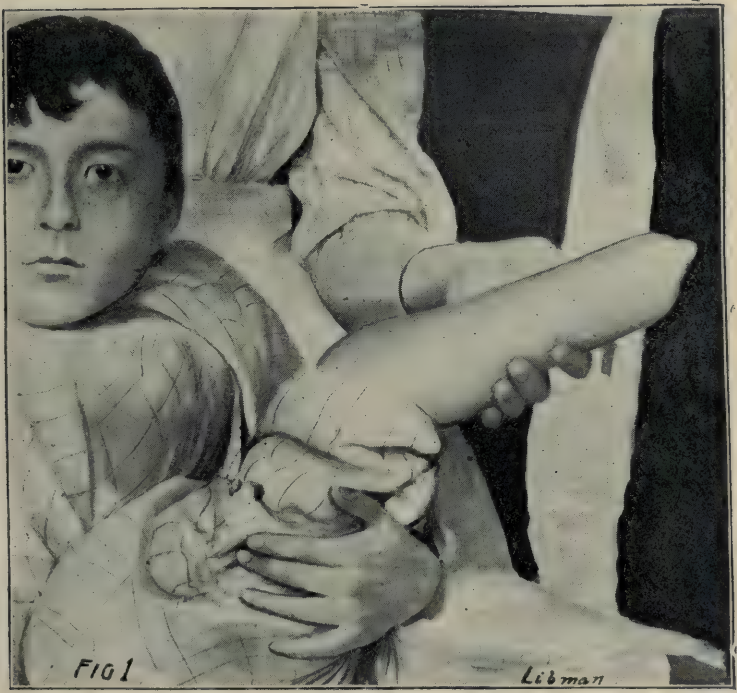


FIG 1

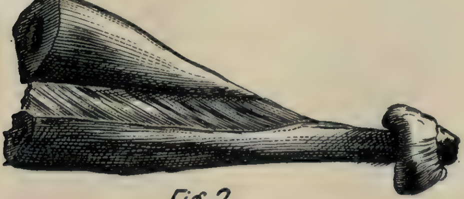


Fig. 2.

LILIENTHAL'S CASE OF CONICAL STUMP.

in the accompanying plate from a photograph by Dr. Libman of the Mt. Sinai Hospital House Staff. The little nipple like protruberance at the end of the stump consists of granulation tissue covering the end of the elongated fibula. Both bones had participated in the formation of the deformity but chiefly the fibula. The bones for about three quarters of an inch from the extremity were covered only by periosteum and skin. The little girl was admitted as my private patient to Mt. Sinai Hospital and on September 10th under chloroform anæsthesia the old scar was excised and two inches of fibula with about one inch of tibia were cut off with a chisel. This was done in order to avoid necrosis sometimes following the use of the saw. The tibia was cut leaving a clean smooth surface but the fibula was partly fractured and was then smoothed with a rongeur. No crushing bone forceps was used for the same reason that the saw was discarded. The wound was rather closely sewn up and a dry dressing applied with posterior splint, no bandage turns covering the dressing at its extremity. Primary union followed, the patient being discharged in ten days. She now uses her artificial leg, the scar being soft and pale.

The accompanying diagram shows the condition of the bone extremities. Both are conical but the fibula has evidently grown the faster. This is further shown by the direction of the fibers of the interosseous membrane which slant as if they had been dragged onward by the rapidly growing fibula. The mushroom shaped extremity is skin and the darkly shaded tip is granulation tissue. A fine probe may be inserted into the marrow cavity of the tibia nearly to the end of the bone and into the fibula for about an inch.

Conical stump is a condition which is liable to recur and this should be remembered in giving a prognosis more particularly when the patient is a rapidly growing child.

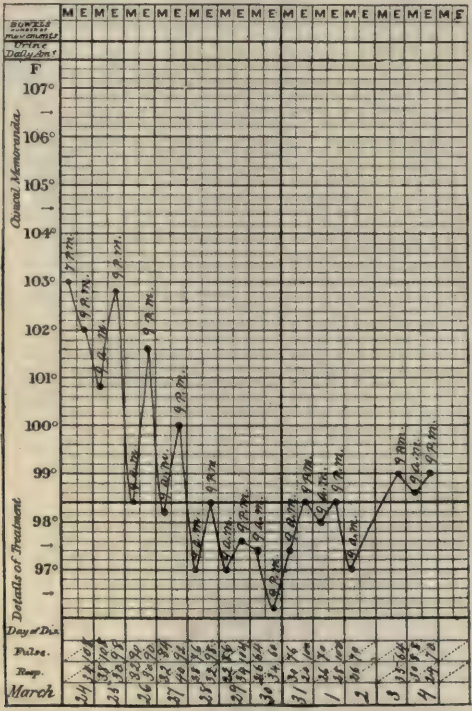
SUBACUTE BRONCHITIS: MEASLES: CROUPOUS PNEUMONIA : ACUTE NEPHRITIS : FEBRIS INTERMITTENS, TERTIAN.

BY SAMUEL S. ADAMS, M.D.,

Washington, D.C.

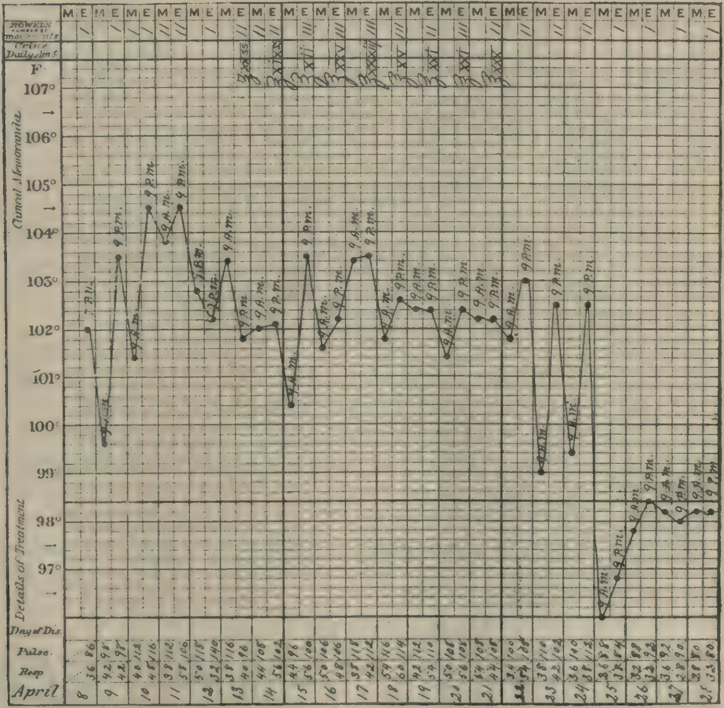
I. B., female, white, aged twelve years, was admitted to my service February 8, 1893. Previous history.—She was treated in the institution in December 1892 for bronchitis and was discharged cured. She has had a cough, with a free, purulent expectoration, ever since her discharge. Her appetite has been very poor of late.

Present Condition.—General appearance is of a well nourished girl. The digestive, genito-urinary, nervous



and circulatory systems are normal. Respiratory System.—Cough loose and frequent, with purulent expectoration. Vocal fremitus slightly increased over entire chest, but no dullness. Large and small moist rales over both lungs. This sub-acute bronchitis persisted for five or six weeks, but was finally controlled.

March 25th.—Has been complaining for several days, but there were no definite symptoms until yesterday afternoon when she said her head ached and she lay upon the bed the rest of the day. These symptoms became worse toward night and at nine o'clock her temperature registered 103° F. in the axilla. Her eyes were somewhat suffused. This morning the eyes are greatly suffused; there is coryza and a dry, rasping cough, accompanied by acute pain. A red papular eruption in patches on the face and neck, and barely distinguishable on arms and hands. I diagnosticated the rash as measles and ordered patient to the Isolating Ward.



March 26th.—Is covered from head to foot with bright red papular eruption, distinctly crescentic in shape. Eyes suffused and intense photophobia. Does not feel particularly uncomfortable in spite of the cough and coryza. April 2d.—Her condition steadily improved and to-day she was removed to the Medical Ward. April 5th.—She was permitted to be up and about the ward as she has not had an unfavorable symptom for more than a week.

April 8th.—Yesterday and to-day she has been complaining and lying on her bed, not caring to play with the other children. Has fever, cough and loss of appetite. Auscultation revealed a few dry and crepitant rales at base of right lung, posteriorly and laterally. Occasionally complains of acute pain in region of right kidney.

April 10th.—Condition worse. Vocal fremitus, dullness, bronchial breathing and crepitation over base of right lung. Pain has disappeared. Ordered jacket, ammonium carbonate and liquid diet.

Urine contained 5 per cent. albumin and numerous epithelial and hyaline casts.

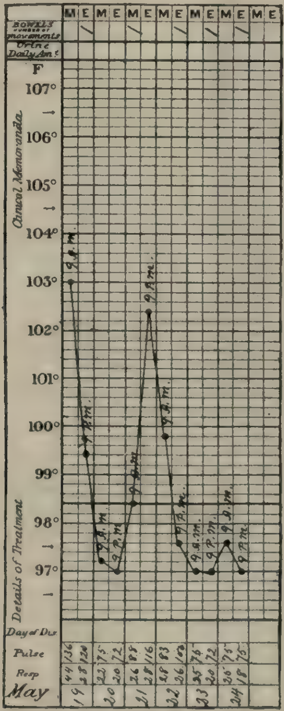
April 12th.—Has headache, nausea and vomiting. The chest signs have become more intense. Voided 12 ounces of urine in 24 hours, more albumin and casts. April 14th. —Marked bronchial breathing, fremitus, with numerous sub-crepitant rales over right base; broncho-vesicular breathing, without rales on left. Nineteen and a half ounces of urine, with less albumin and fewer casts.

Ammonium discontinued. Whiskey, two drachms every three hours ordered. Calomel and compound jalap powder. April 15th.—Physical examination unchanged. Heart's action better. Breathing rapid and superficial. Twelve ounces of urine, neither albumin nor casts detected.

April 18th.—Cough frequent and painful; breathing rapid; drowsy, but sleeps little. Harsh bronchial respiration on right side, broncho-vesicular on left. Urine normal; 15 ounces voided. April 19th.—Bronchial breathing less marked; numerous sub-crepitant rales on right; more vesicular on left. General condition better. Urine normal; 21 ounces.

April 21st.—Cough kept her awake last night. Rales very numerous and resonance better over right; respiration nearly normal on left. April 23d.—Has slept much better the past two nights; cough less frequent and less harassing. April 25th.—Temperature fell below normal this morning. Only a few large moist rales heard. Her general condition seems normal. April 26th.—A few large moist rales occasionally heard after coughing. Semi-solid food ordered. Her condition improved and she was again pronounced to be well on May 5th.

May 19th.—Has headache, fever and chilly sensations. Confined to bed and liquid diet ordered. Quinia muriate three grains every four hours ordered. May 20th.—Temperature subnormal; feels well. May 21st.—Headache chill and fever. Diagnosticated intermittent fever, tertian., May 31st.—She was discharged to-day, having been perfectly well since the 21st.



The powers of endurance of the child are certainly illustrated by this case which, in four months, passed through severe attacks of sub-acute bronchitis, measles, croupous pneumonia, acute nephritis, and intermittent fever.

New York Academy of Medicine.—At the January meeting of the Pediatric Section, Dr. F. M. Crandall was elected chairman, and Dr. W. L. Stowell secretary.

A CASE OF OPIUM POISONING IN A FIVE MONTHS BABY.—RECOVERY.

BY A. BROTHERS, M.D.,

New York.

N. F., female infant, five months old; a puny, scrofulous baby brought up chiefly on the bottle. A month ago the writer succeeded in pulling the child through a severe attack of dysentery extending over six weeks and during which the child was given a large amount of opium by mouth and rectum. After remaining well for a month the bowels became loose several days ago (Oct. 20, '94) and a powder containing bismuth subnitrate gr. 5, Dover's powder gr. i., and acetate of lead gr. $^1/_2$, was ordered every four hours. The father, who was suffering from diarrhœa some time previously, had been taking powders containing each one grain of powdered opium and 10 grains of bismuth subnitrate. About 10:30 P.M. of the night of October 23d, after having taken its own powders very regularly during the preceding twenty-four hours, the baby was given, by mistake, one of the powders prescribed for the father and containing one grain of opium. The child quickly became drowsy and the mistake was at once recognized. On my arrival an hour later, three doses of ipecac had been given without producing emesis. The spoon showed a trace of the powder and it is probable that some was lost during the act of swallowing. The child seemed restless and nauseated. The finger in the throat failed to induce vomiting. The pupils were contracted to a "pin-hole" size. The pulse was 180 per minute. The child seemed very drowsy but was made restless by the apparent nausea. The respiration varied between 36 and 60 according as the child relapsed into a somnolent state or became restless from the nausea. A hypodermic injection of gr. $^1/_{400}$ atropine sulphate was given and the stomach thoroughly washed out by means of a soft rubber catheter attached to a fountain-syringe. About a quart of water was used but only the syrup of ipecac could be recognized in the washing with a slight trace of the powder. Before leaving the child for another urgent call the pupils were found to be dilating. One hour later (12:30) the child was very drowsy but forcibly kept awake. The pulse was 152, the pupils were still moderately contracted. A second hypodermic injection of atropine was given and the pupils became moderately dilated. The bowels were injected with a large enema of soap-suds which resulted in a small fecal passage. Black coffee, camphor, and cold sponging were ordered and directions left to keep the baby awake all night. Next morning I found the baby wide awake and playful after having given the parents the greatest trouble to keep it awake during the night. From this moment recovery was progressive and uneventful.

The Discussion on the Value of the Diphtheria Antitoxin at the Berlin Medical Society, was concluded at the third session of the society. Dr. Schiemmann warned general practitioners against employing the antitoxin, which he said should be left to the hospitals for the present. Professor O. Liebreich, director of the Pharmacological Institute of the University, criticised the published serum statistics. He said that the Berlin hospitals had always had a much higher percentage of deaths from diphtheria than the Berlin town practice. This was because, broadly speaking, only serious cases were brought to the hospitals. But since the introduction of the serum treatment, a far greater number of cases—and cases of all sorts—had been brought to the hospitals, and so it was quite natural that the percentage of deaths had fallen considerably. He considered the serum treatment to be based on fallacies very similar to those which had formed the foundation of the tuberculin treatment. It would be interesting to find out, he added, what action on the organism injection of pure indifferent serum would have. Dr. Hansemann, in a few last words, stood to his view that antitoxin is not to be regarded as a specific for diphtheria. —*Med. Rec.*, N. Y., 1895, xlvii., 85.

Professor Heubner has been promoted from the Extraordinary to the Ordinary Professorship of Children's Diseases in the University of Berlin. This is the first time the rank of Ordinary Professor has been accorded to any one in Germany in connection with this specialty. —*Brit. Med. J.*, 1895, i., 149.

A CASE OF DOUBLE OPTIC NEURITIS—CONGENITAL SYPHILIS.

BY GEORGE CARPENTER, M.D., LONDON.

Senior Physician to Out-Patients at the Evelina Hospital for Sick Children, London.

I first saw Jessie Hamilton, æt. eleven years, at my out-patients on May 3, 1894. Her mother stated that she had complained of pain in the head for 12 months which had become worse lately. There was also pain of a piercing character under the right nipple and down the sides of the abdomen. She also "vomited every morning and the vomit had the appearance of yellow water." She is said to scream out owing to the intensity of the headache. Our resident medical officer, Mr. W. L. Wainwright informed me that prior to her coming under my care she had been in the hospital. Her headaches were very severe and she screamed out then. There was vomiting and obstinate constipation, and she was so marasmic that she had to be placed in a water bed. She had had stomatitis and her teeth were much decayed. These were removed whilst she was in hospital. She was found to be astigmatic, and three weeks prior to my seeing her she was examined at Mr. Nettleship's out-patients at St. Thomas' Hospital and considered there not to be suffering from optic neuritis. Mr. Wainwright had previously been suspicious as to the healthiness of her optic discs. She was corrected for hypermetropic astigmatism which, Mr. Wainwright says, caused her headaches.

Family History.—The mother had borne 7 children alive, there had been one miscarriage and 6 still-births. No history of snuffles. All had eruptions three or four days after birth, occurring on their buttocks and chest and extending a little below the knees.

On Examination.—Heart, lungs, liver and spleen normal. Abdomen rather distended but nothing abnormal detected. *Nervous System.* No abnormalities.

Eyes.—Pupils dilated, active to light and accomodation. No signs of iritis or interstitial keratitis.

Ears.—Normal. Pulse, 68, irregular as to time. Not full. Temp. 97.4 ° F. The skull is suggestive of osteophytic deposit. Thus the frontal bones convey the impression of merged nodes with a buffer-like separated bossiness in front. The parietal eminences are prominent.

Teeth.—The incisors on the lower jaw are close together and ridged, as also the right canine which is peggy. In the upper jaw the right upper central incisor is ridged. The lateral incisors are peggy as also the canines. The spacing is excessive. Thus the central incisors of the upper jaw were not characteristic though the lateral were suspicious looking.

Ophthalmoscope.—Right optic disc. Edge not clearly cut anywhere. No actual bending of vessels can be seen but the disc margin is hazy.

Left optic disc. The vein crossing the lower margin of the optic disc is bent. The disc here is hazy, and the vessel is partially obscured.

I recommended her for admission. Her general condition improved whilst in hospital and she was discharged about three weeks prior to her again coming under my care viz., on June 14. I find the following notes for this date. The optic neuritis is very much more marked in both eyes than it was. The *right* optic disc is very swollen. All the vessels bend as they cross the margin and are freely covered with lymph. A large patch of lymph is seen on the vessels passing to the temporal side on the surface of the optic disc. The optic disc is somewhat paler than its fellow and somewhat granular looking not unlike carded wool.

The same remarks apply to the left optic disc as regards the bending of vessels. The exudation of lymph is not so marked as on the other side and the disc is a shade or two pinker. The severe pains in the head from which she formally suffered are now better.

She was ordered

Liq. Hydrarg. Bichlor. . .	m. 80
Potassii Iodidi	gr. 111

F. S. A.

June 28th.—Pains in the head better. Slight stomatitis. Ordered Hyd. c. Sacch. (gr. iv.) and a chlorate of potash mixture. July 12. Discs less swollen.

July 26th.—Right eye, *indirect.* The only sign of bending of vessels is one at the upper margin. The margin of the optic disc is hazy but not very. The center is yellow with lymph. In color the disc is several shades paler than the red reflex.

Left eye, *indirect.* Optic disc hazy on the upper, lower and temporal margins. To the nasal side the haze is not nearly so marked. A vessel going upwards is bent and and smeared with lymph. The center is yellow with lymph. This disc also is several shades paler than the red reflex.

I showed the child to my colleague, Mr. F. S. Eve, who was quite of opinion with me that the case was probably due to congenital syphilis.

September 20th.—Right optic disc, *indirect*. Color about normal. The vessels in the centre are much more apparent. The disc all the way round, with the exception of the lower margin is clearly cut. A slight amount of lymph on the veins going downwards. The vein at the upper margin still bends as it crosses the edge of the optic disc and some lymph shows beyond that.

Left upper disc, *indirect*. Color about normal. The upper segment is fairly clearly cut. The lower in comparison is hazy, but as a matter of fact there is a trifling haze all round. The vein going upwards shows a slight bend, as also the artery going downwards on the temporal side and this is slightly blurred. The center of the disc appears clearer.

October 18th.—I sent the case to my colleague, Mr. W. A. Brailey, asking him to test her visual field. In reply he writes, Oct. 19th, " the girl at Guy's yesterday had so far as I can judge, vision perfect and field perfect. The eyes look to me as if the optic neuritis were subsiding, for in the left especially there was haze at the upper margin of the disc and at the origin of the vessels. I should judge with you that the patient is the subject of congenital syphilis "

It does not appear clear that this patient had basal meningitis of syphilitic origin, though of course, this is a possibility if somewhat improbable. It is much more likely that a gummatous growth involving the chiasma induced the eye mischief rather than a gummatous inflammation of the dura mater with secondary implication of the optic vessels. There may, however, have been a cerebral tumor with involvement of the optic nerves from intra-cranial tension. Illustrative of the effects of intra-cranial tension an interesting experience occurred at the Evelina Hospital the other day. An infant with hydrocephalus had external pressure applied to the skull with the result that optic neuritis, previously absent, rapidly developed. On removal of the pressure the signs of optic nerve implication quickly disappeared. Pressure was again applied and discontinued and with the same results. The swelling of the discs was merely a mechanical phenomenon brought about by blood stasis.

A CASE OF BILATERAL ZOSTER.

BY GEORGE CARPENTER, M.D., LONDON.

Senior Physician to the Out-Patients at the Evelina Hospital for Sick Children, London.

Bilateral zoster is an extremely uncommon affection and there are but few cases on record in Great Britain. In 1892 I published a case of double zoster on the same level, occurring in a female child four years of age, in the British Journal of Dermatology.* In this case a zoster eruption on the right side started from the lower dorsal spine and passed across the front of the chest at and below the nipple level to a point well to the left of the mid line of the body. On the left side the eruption commenced at the spine on the same level as that on the right side and reached to the posterior axillary line.

In February, 1894, Edward Skinner, aged six years, attended my out-patients for an eruption which from his mother's statement appeared "all-of-a-sudden" a week previously. He did not complain of pain before its onset and since of itching only.

On the right side the eruption commenced mid-sacrum behind, involved the upper half of the buttock and following the course of the crest of the ilium ended on the outer side of the thigh below the level of the penis. The eruption consisted of irregular patches of excoriations or crusts and in some of these it was quite possible to distinguish the herpetic grouping of vesicles.

On the left side the eruption similar in character extended somewhat lower on the buttock and, as on the other side, following the line of the iliac crest reached nearly half way down the outer side of the left thigh. The eruption in neither case extended above the iliac crests. He quickly recovered.

A Numerous Progeny.—A man died recently near Lebanon, Pa., at ninety-two years of age. He had been the father of twenty-two children, fifteen of whom survived him. There were besides, at the time of his death, one hundred and ten grandchildren and ninety-six great-grandchildren.—*Med. Rec.*, N. Y., 1895, xlvii., 78.

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* No. 39, Vol. 4.

Society Proceedings.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

Stated Meeting, Jan. 10, 1895.

"The Milk Supply of New York, and its Availability for Infant Feeding."—Dr. Henry Koplik read a paper with this title. He said that with a view to determining whether or not the milk supply of New York City was as unfit for infant feeding as many seemed to think, he had undertaken a series of observations on this point. The greater part of the experiments and observations had been done by Dr. Lewi under his supervision. In his opinion, the best practical way of determining the freshness of milk was by the chemical test, not only because it was not difficult to apply, but also, and chiefly because the bacteriological method necessitated a delay of at least forty-eight hours. Fresh milk always gives with litmus paper an amphiteric reaction. The degree of acidity of a given sample of milk could be easily and quickly determined by the volumetric method, and from the degree of acidity so determined, important conclusions could be drawn regarding the freshness of the milk, and its fitness for infant feeding.

It has been shown by Plauth that the difference in acidity between fresh and boiled milk diminishes as the milk grows older. There is a period during which the acidity remains stationary. This is called the "incubation stage," and by common consent it has been decided that milk is fit for feeding to infants only during two-thirds of this period. After this incubation stage the acidity of the milk increases, and with this, there is an enormous increase in the number of bacteria found in the milk.

From the foregoing observations, it is evident that it is important that the incubation stage should be prolonged as far as practicable. Soxhlet and Plauth have demonstrated that the length of this period is largely dependent upon the temperature at which the milk is stored, and the cleanliness attendant upon its collection and distribution. The reader of the paper said that he had found that when milk was collected in sterile tubes without any precautions as to cleanliness of the udder or of those handling the milk it would keep sweet for nine hours, whereas the incubation stage of the very same milk could be made decidedly longer if the cow's udder and the milker's hands were simply washed with plain water.

Referring to tests that they had made to determine the effect of the weather on the keeping of city milk, he said that last February with a temperature of 13° Cels. and with milk having an initial acidity represented by 84, the milk was perfectly preserved without ice for a period of twenty-four hours, and that in March it had been kept sweet for fully forty-eight hours. They had obtained samples of milk from various districts of the city, and in not one instance during the summer had they found milk taken from the little dirty stores of the tenement districts in the early morning beyond the incubation period. It might be said in a general way that the city milk would not go beyond the incubation stage in winter for twenty-four hours, and in hot summer weather for five hours. The quantity needed for the entire twenty-four hours should, however, be obtained at one time from these little stores, and that time should be in the early morning, for the store-keepers frequently take no precautions to preserve the milk. The rule of the poor people in these parts of the city is to get small portions of milk at several different times during the day.

According to Plauth, the crucial test of the freshness of milk is to place it in a thermostat at a temperature of 38° C. for a certain number of hours. Fresh, clean milk should remain unchanged under these conditions for at least five hours; fresh, but not thoroughly clean milk, should remain unchanged for four hours; moderately clean milk in the first two-thirds of the incubation period would show increased acidity in three and a half hours; and milk in the last third of this stage would show increased acidity in two hours.

They had also made some experiments on the effect of filtering milk, according to the plan advocated by Dr. A. Seibert. In these experiments the cotton and aluminum filter recommended by Dr. Seibert for this purpose, had been used. On August 24, a sample of fresh milk was found to have an initial acidity of 84 before filtration, and an acidity of 80 after filtration. At 6 P.M. of that day the unfiltered milk was found to have an acidity of 106, while that of the filtered milk was 138. The experiment was repeated on August 29 with a similar result, the acidity of the unfiltered milk after a certain number of hours being 128, while that of the filtered milk at the same time had risen to 140.

Another series of experiments were undertaken with the Freeman pasteurizer. On August 26, with the mean temperature of the surrounding air at 28 Cels., the milk at 9 A.M. before pasteurizing had an acidity of 86, and at 6 P.M. 88, while at 9 A.M. of the following day, it was found to be in the last third of the incubation stage. This experiment was repeated on September 1, which was a cooler day. At 9 A.M., before pasteurizing, the acidity was 84, and at 5 P.M., 110, while at 12 M. the next day, the milk was not fit for use. These specimens of pasteurized milk were not kept on ice. From these observations, it is evident that pasteurization cannot be relied on to keep milk sweet in summer for more than ten or twelve hours, and that milk pasteurized at the dairy must be treated like ordinary milk on its arrival in this city.

In conclusion, the author said that it was his practice to sterilize the milk in warm summer weather at 90° to 92° Cels, as milk so prepared could be preserved in proper condition for feeding to infants for a period of two or three days. If the ordinary city milk were procured early in the morning, and properly sterilized, it would be perfectly fit for infant feeding. For these reasons he desired to protest against the use of certain recently introduced appliances, such as centrifugal apparatus, intended to be operated at the dairy. Such appliances were entirely unnecessary, and only served to complicate the problem of supplying a good wholesome milk to city infants.

DISCUSSION.

Dr. August Seibert said that the observation referred to in the paper by which the incubation period of milk was found to be greatly prolonged by washing the udder and hands with water, only showed how much a little cleanliness could do in the way of preventing the decomposition of milk by banishing the bacteria. Similarly, the tendency to decomposition could be prevented by passing the milk through a clean filter. His observations had shown him that absorbent cotton was practically sterile, and that if milk were filtered through clean cotton, a bacteriological examination would show that about seven-eighths of the bacteria had been removed by this process. The only explanation of the remarkable results recorded in the paper as obtained from the filtration of milk, was that a dirty filter had been used in the experiments.

He had been pleased with the paper, for it showed more plainly than before that pasteurization was insufficient to kill the bacteria, and that sterilization of milk alone offered a reliable method of preparing milk for infants.

Dr. Rowland G. Freeman said that as all bacteria did not produce acid, the determination of the quality of a sample of milk by means of a chemical test of its acidity, did not take cognizance of certain varieties of bacteria. The length of time that elapses before bacteria begin to multiply in milk he had found by laboratory experiments to depend largely upon the kind of bacteria present. He thought that the ordinary city milk, which was usually thirty-six to forty-eight hours old, showed a much larger number of bacteria than milk just taken from the dairy. This increase in the number of bacteria might occur without any increase in the acidity of the milk. This would occur, for example, if typhoid bacilli were present. The conditions under which pasteurized milk was tested by the author were more severe than those ordinarily found in practice. So far as he knew there had been only one complaint of the milk furnished by the Strauss Milk Bureaus souring, and investigation showed that in this instance the milk had been kept under the stove. The pasteurized milk should be kept cold. The objection to sterilization of milk was that a temperature of over 80° Cent. changed the chemical composition of the milk. The speaker said he would be sorry to have the impression given at this meeting that milk, twenty-four or thirty-six hours old, was as good as that brought here quickly from the dairies.

Dr. E. F. Brush, of Mount Vernon, objected to the opinion going forth that most of the city milk was suitable for infant feeding, provided only that it did not change in acidity for a few hours. The observations detailed in the paper entirely overlooked the effect of various adulterations of milk. His extensive dairy experience had taught him that it was not uncommon for some preservative to be added to the milk, either at the dairies, or by the middle men ; and if these people learned that the physicians thought that the proper test of the good qualities of milk was its power to remain sweet for a certain number of hours, they would be pretty sure to see to it that the necessary preservative was added to the milk to insure this result. He had seen babies made sick from taking milk from a herd of thirty cows, only one of whom was sick ; hence, it would be absurd to say because that milk remained for a certain number of hours without increasing in acidity that that milk was suitable for infants. There were other factors to be considered.

The great discrepancy in the results obtained by Dr. Seibert and by the author of the paper in their experiments on the filtration of milk might possibly be explained by an experience that he had had at one time. He had attempted to rapidly cool fresh morning milk by passing it through a cooling machine, but had found to his astonishment that the milk so treated soured very much more quickly than milk not subjected to this process. He had at last been compelled to explain this phenomenon on the theory that milk underwent oxidation. That something besides bacteria was capable of souring milk was shown by the familiar experience of milk turning after a thunderstorm. While milk so changed, though not coagulated, would quickly make a baby sick, he had found from his experience in the Mount Vernon Infant Asylum that if it were still further soured, and the coagulum broken up, it could be fed to the babies with impunity.

He could not agree with the reader of the paper that the milk supply of New York City would be found to be uniformly of good quality if examined in the early morning.

Dr. J. Lewis Smith asked if it were not a fact that pasteurization would destroy the ordinary pathogenic germs found in milk.

The Chairman said that while it was generally safer to use sterilized milk, it could not be denied that some children did much better on pasteurized milk. Personally, he had not observed any advantage from filtering milk.

Dr. Lewi said that the cotton used in the experiments on filtration of milk had been that furnished with Dr. Seibert's aluminum filter. The precaution had been taken to bake the entire quantity in an oven, and disks about three centimetres in thickness had been used each time. During the summer at the time when the experiments were being made with the pasteurized milk, the temperature of the surrounding air had been frequently between 85° and 87° F., and as the milk tested was kept at the ordinary temperature of the room, it could not be said that it had been subjected to conditions other than those which would obtain in practice.

Dr. Koplik in closing the discussion said that certainly the filtration experiments had been conducted with more care than would have been observed by an ordinary family in preparing the milk. He had taken up this subject of the city milk supply because there were many people who could not afford to buy the expensive milk offered by some firms as the only proper milk for infants. The results that he had obtained were similar to those arrived at by other and better observers. Pasteurization kills all the pathogenic bacteria usually found in milk, but it does not kill the bacterium lactis, the potato bacillus, and some other micro-organisms. In the winter it was sufficient to simply heat the milk, but in summer it should be sterilized at 90° Cels. The use of raw milk for food was not in accordance with our modern views on this subject.

Toluol in Diphtheria.—Prof. Loeffler uses as a topical application in diphtheria, the following formula:

Toluol,	18 c. cm.
Alcohol,	30 c. cm.
Sol. Ferric chlor.,	2 c. cm.
Menthol,	.5 gme.

ɱ *Am. Med. Surg. Bul.*, 1895, viii., 39.

Gastrostomy in a Young Child.—At the meeting of the Societé de Chirurgie at Paris, December 19, 1894, Dr. Monnier presented a child five years of age upon whom he had done gastrostomy for an impassable stricture of the esophagus due to smallowing caustic potash.—*Bost. M. & S. J.*, 1895, cxxxii., 64.

Proposed Legislation for the Board of Health.—The New York City Board of Health propose to ask the Legislature to amend the act now in existence with regard to the free distribution of vaccine for the relief of persons suffering from small pox, the organizing of a corps of physicians to guard against the spread of the disease, and the sale for the city's benefit of whatever vaccine is left on hand, so as to include powers for similar use of antitoxin and treatment of diphtheria. An act covering the desired amendment has been prepared and will be forwarded to Albany by President Wilson.—*Med. Rec.*, 1895, xlvii., 115.

LOUISVILLE CLINICAL SOCIETY.*

Stated Meeting, December 4th, 1894.

Stenographically reported by C. C. Mapes.

Intubation for Diphtheria.—Dr. T. C. Evans said that he had recently practiced intubation in a case of diphtheria, which presented a few interesting features. The patient, a child three years old, suffered from an attack of diphtheria not unusual in severity; there was no diphtheritic membrane present except in the larynx and nose, leaving the pharynx entirely unobstructed save from more or less enlargement of the tonsils. However respiration became so much impeded that intubation was decided upon.

The point to which he wished to direct particular attention was not connected with the process of intubation: Twenty-four hours after inserting the intubation tube, the child absolutely refused to swallow anything. No amount of persuasion or coaxing could induce it to swallow even a half teaspoonful of fluid of any kind; she could not be induced to take whiskey, milk or anything else. She would take it into her mouth and keep the mouth closed until unobserved, then spit it out again in a napkin or other available receptacle.

His experience with intubation in these cases was that anorexia or the distaste for food of any character is decidedly the most unfavorable symptom that manifests itself. Previous to this time he had never seen a case recover where there was such a marked distaste for all kinds of nourishment.

In this case he resorted to the use of the stomach tube which was introduced with the intubation tube still intact, and the child was fed with milk and egg twice per day, for seven days. A tablespoonful of whiskey was given with the nourishment morning and night. The intubation tube was removed on the sixth day; the child was fed by means of the stomach tube for a day or two longer, since which time there has been no trouble, and the patient has entirely recovered.

DISCUSSION.

Dr. J. B. Marvin said that if he understood the reporter correctly, the stomach tube was introduced *per orem* while the intubation tube was still inserted. He inquired if he had ever tried putting a stomach tube through the nose. He had never tried to introduce the stomach tube while an intubation tube was still in the larynx, but it had occurred to him that it might be accomplished with greater facility through the nose than the mouth.

He had several cases in children as well as adults, but adults especially, with a tuberculous condition of the larynx, where there was extreme difficulty and pain on swallowing, where he could make them swallow by having them lie flat on the belly with the head low, making the fluid as it were run up hill. In this way they were able to swallow very nicely. He thought this method worth trying in children after intubation.

Dr. S. G. Dabney said in regard to Dr. Marvin's remarks, that Dr. Waxham, of Chicago, who has probably had the largest experience of anybody in this country in intubation, recommends the introduction of the stomach tube through the nose in the class of cases under discussion. He had never had occasion to use the stomach tube. Dr. Barbour will remember one case where decided benefit might have been obtained by the use of the stomach tube, but under nutritive enamata the little patient finally made a good recovery.

Dr. T. C. Evans said that it is customary in feeding children after intubation, while the tube is still in the larynx, to invert them as Dr. Marvin suggests, in cases where they can be made to swallow. However, in some cases it is impossible by any means to induce them to swallow. In the case reported, the child would absolutely make no effort to swallow, and inversion had no effect.

There is no trouble about introducing the stomach tube through the mouth of a child three years of age. While they close the mouth tightly at first, a finger can be inserted behind the teeth and into the pharynx, and by titillating the fauces slightly, the child readily opens its mouth and the tube can then be inserted without further trouble.

He did not think there would be any objection to feeding by means of the stomach tube passed through the nose, but he had never found it necessary to resort to it. Of course to do this the tube would necessarily have to be small, and the process would be less rapid on this account.

In this case there was no vomiting after the tube was removed, and the termination of the case has been in every way satisfactory.

Double Optic Neuritis.—Dr. Wm. Cheatham said that some time ago a little child was brought to him from South Dakota, with absolute blindness. There was a history of severe headache, staggering gait, and all the symptoms pointing to brain growth. The child could scarcely walk when being led. He made diagnosis at that time of brain growth, and gave an unfavorable prognosis; but the father wrote that he had had specific trouble in his younger days. The child was put on inunctions of mercury, and given iodide of potassium in good-sized doses internally. This treatment has been continued up to the present time. Sight has returned, and in testing his vision, which can only be done with bright objects, he finds that the child can see a nickel further than he can. The ophthalmoscope shows a blue condition of the optic nerves, with blood vessels about normal in size.

Another case came under his observation shortly afterward, presenting about the same symptoms. An examination showed beginning atrophy of the optic nerves, with very poor vision. They took this child to a "faith cure" in Chicago, and it is reported that complete recovery has taken place under the so-called faith cure.

DISCUSSION.

Dr. S. G. Dabney said that it is very gratifying to find cases of double optic neuritis with other cerebral symptoms recover under specific medication. We sometimes see cases of double optic neuritis in young persons, and occasionally in older ones, get well. They are probably due to meningeal irritation at the base of the brain; perhaps from actual tumor; perhaps from gumma which is absorbed by iodide of potassium and mercury.

Dr. T. C. Evans asked what was the age of the patient with double optic neuritis, and how long did blindness exist?

Dr. Wm. Cheatham said in reply that the child was four years old, and that the blindness had existed for only a short time, and came on very suddenly.

Report on Diphtheria.—Dr. Louis Frank made a preliminary report of the bacteriological examinations recently made in cases of diphtheria, in the Laboratory of the Kentucky School of Medicine. So far twenty-three or twenty-four cases were examined; quite a number of them had been reported as true diphtheria, others as pseudo-diphtheria. The bacteriological diagnosis in every case but one has been verified by the clinical history. One case which was reported to be pseudo-diphtheria, was claimed by the attending physician to be a case of true diphtheria, he judging from the clinical history. One case in which the throat was examined by Dr. S. G. Dabney reported as pseudo-diphtheria, he did not know whether it proved by the clinical course to be true diphtheria or not. We have examined two or three cases which have been quite interesting. One of them was a case which had been seen in New York by Dr. Shepard, who diagnosed simple follicular trouble. The child came on here and afterwards again developed throat trouble. It was thought again to be a simple follicular condition of the tonsil until the child developed severe throat symptoms, and it became necessary to insert a tube. A specimen of the exudate was then examined and the case proved to be one of true diphtheria. He thought this to be a case where diphtheria was engrafted upon a case of follicular tonsillitis, where the membrane had probably infected or invaded the crypts of the tonsil rather than spread over its outer surface and over other portions of the pharynx. Another case examined yesterday showed absolutely no membrane in the nares, in the throat, or upon the tonsils. However, the child became choked up and a tube was inserted. The secretions, as much as could be obtained by a swab, were examined and this also proved to be a case of true diphtheria. One case was reported clinically as diphtheria which the microscope proved to be one of pseudo-diphtheria. The child was then allowed to go among other children, and showed no further trouble nor was there further spread.

These investigations would be continued, and, when sufficient cases have been investigated, a tabulated and complete report would be made.

Dr. T. P. Satterwhite asked if it was proposed in their investigations to demonstrate, as far as may be possible, about the approximate time that children who have suffered with diphtheria may mingle with other children, or with the balance of the family? Did they have any information as to about the average time when there is no longer danger of contagion?

Dr. Louis Frank said that reports from the Health Board of New York show the minimum time when the patient may commingle with others, after an attack of diphtheria to be six or seven days; the maximum time thirty days. They keep every case isolated until there are no more bacteria to be found by a careful bacteriological examination.

A Fatal Case of Uncomplicated Chicken-pox.—Nisbet reports, in the *Australasian Medical Gazette*, for November 15, 1894, a case of uncomplicated chicken-pox in a child eight and a half months old, which proved fatal, owing, in his opinion, to the fact that the eruption covered every part of the body, even the palms of the hands and soles of the feet, and produced practically the same effect as an extensive burn. On the seventh day of the disease spots appeared in the mouth, which changed to irritable ulcers, causing great distress. Death occurred on the tenth day. Dr. Nisbet thinks that there was no question as to diagnosis, as four older children in the same house were ill with the disease, and there was an epidemic in the town at the time. Collie, in "Quain's Dictionary of Medicine," states that "no physician has recorded a fatal case of chicken-pox."—*Bost. M. & S. J.*, 1895, cxxxi., 19.

Antitoxin Not New.—There is nothing new under the sun. Inoculation with antitoxin, it appears according to a learned and ingenious correspondent of a Munich medical journal, is by no means new, nor even modern, having been employed by no less a person than Mithridates, King of Pontus. The authority for this statement is the Roman naturalist Pliny, who relates that this monarch, for reasons known to himself, was afraid of being poisoned, and therefore made himself proof against all such attempts by gradually accustoming himself to all known poisons, producing the state known from him as mithridatism. He was accustomed to make use of an antidote called mithridaticum, whose principal ingredient was the blood of the Pontic duck, this creature having been chosen because it had the reputation of living on poison. Here, therefore, we have the case of the blood of an immune animal being used to make another animal immune.—*Daily World.*

The Laboratory of Bacteriology of the Philadelphia Polyclinic will make free bacteriological examinations in cases of suspected diphtheria.

Current Literature.

I.—MEDICINE.

Thorndike, Augustus. (Boston): Acute Infantile Arthritis in the Hip. (*Boston Med. and Surg. Journ*, 1894, cxxxi., 435 and 456.)

To recapitulate, the primary causative factor in acute arthritis is to-day believed to consist of an acute infection of pyogenic micro-organisms. This infectious matter may enter through any damaged surface of skin or mucous membrane or any subcutaneous phlegmon. Other predisposing causes may also exert an influence. Of these traumatism acts principally to determine in which joint the affection shall manifest itself. The injury may be a slight one, and traumatism acts less frequently in the hips than in the more exposed joints. The infectious diseases, scarlet fever, measles, chicken-pox, variola, typhoid fever, and parotitis may accompany or precede an attack of acute arthritis; their rôle is still very imperfectly understood, and the same may be said of tuberculosis and syphilis. They may act either in making easy the entrance for the pyogenic germs, or in reducing the patient's capacity for destroying and eliminating them. Since specific germs of typhoid fever have been found during the fever, both in osteomyelitic marrow and joint pus, it is possible that the typhoid bacillus may occasionally be a pyogenic factor. Tuberculosis and syphilis may predispose to the affection. An acute infectious suppurative synovitis without lesion of bone may also simulate very closely what is usually regarded as the ordinary form of acute arthritis.

Gould, George M.: Eye Strain a Cause of Nocturnal Enuresis. (*Phil. Med. News*, 1894, lxv., 668.)

He gives the details of five cases, in which the enuresis was cured after glasses were fitted and the eye strain removed. Besides these cases he had others in which he was moderately certain that the eyes were the ultimate or a contributing cause of the affection under discussion, but in which the cure was either more slow or the etiology more suspicious, and he did not include them in this report.

Welch, William H. (Baltimore. Md.) **Bacteriological Examinations of Diphtheria in the United States.** (*Am. Journ. Med. Sc.*, 1894, cvii.. 427.)

This paper is a report of the results of the bacteriological study of diphtheria in the United States up to May, 1894. Some of the more important conclusions may be summarized as follows:

1. The Health Department of New York has undertaken the bacteriological examination of all cases of suspected diphtheria in that city, unless objection is made by the attending physician or unless it is not deemed advisable to disturb the patient by such examination. The methods employed are described in detail. During the year ending May 4, 1894, cultures were made from 5,611 cases of suspected diphtheria. The results have proven satisfactory, and are utilized not only for diagnosis, but but also to control the supervision and isolation of the cases.

2. Of 6,156 cases of suspected diphtheria in New York and Boston, 58½ per cent. were proven bacteriologically to be true diphtheria—or, if we include only those cases in which the bacteriological examination was considered to be entirely satisfactory—of 5,340 cases, 67½ per cent. were true diphtheria. These were pseudo-membranous inflammations of the throat and air-passages uncomplicated for the most part with scarlet fever.

3. At least 80 per cent. of the cases of membranous croup in New York were diphtheria, and only 14 per cent. were shown not to be diphtheria.

4. Fifteen cases of fibrinous rhinitis and 4 cases of primary and exclusively nasal diphtheria were all due to the diphtheria bacillus.

5. Various forms of a typical diphtheria, many without membrane, and with the characters of simple catarrhal angina and follicular tonsillitis, are described.

6. Instances of unusual localizations of the diphtheria bacillus, as in the middle ear, in wounds, ulcers, abscesses, conjunctivæ, lungs, heart-valves, and the distribution of the bacilli in autopsies of human beings and of guinea-pigs dead of diphtheria, are described.

7. The various bacteria found associated with the diphtheria bacillus, the most important pathogenic forms being streptococci, staphylococci, and the diplococcus lanceolatus, are considered.

8. In general the great majority of cases of pseudomembranous anginas in scarlet fever are due to strepto-

cocci, but where diphtheria is prevalent and opportunities are favorable for exposure to diphtheria a large proportion may be due to the diphtheria bacillus. The statistics in Baltimore and in Boston present interesting contrasts in illustration of this point. Four cases of diphtheria complicating typhoid fever are described.

9. The name pseudo-diphtheria is applied to pseudo-membranous inflammations of the throat and air passages not caused by the diphtheria bacillus. The most important and common micro-organism in pseudo-diphtheria is the streptococcus pyogenes, but other bacteria may be the cause. The mortality in these affections is low in private practice, being 1.7 per cent. in 408 consecutive cases in New York. In hospitals it may be as high as 25 per cent. Death is generally due to some complication, the most important complications being scarlet fever, membranous laryngitis, and broncho-pneumonia. The disease seems to be only slightly, if at all, contagious. For this reason, and on account of the low mortality in uncomplicated cases, those cases which are proved bacteriologically not to be true diphtheria are not kept under supervision by the Health Department in New York. Until such proof suspicious cases are treated as diphtheria.

10. Of 752 cases of diphtheria in New York, the diphtheria bacilli in 325 disappeared within three days after the complete disappearance of the exudate. In 427 cases the bacilli persisted for a longer time, viz., in 201, for from five to seven days; in 84, for twelve days; in 69, for fifteen days; in 57, for three weeks; in 11, for four weeks; and in 5, for five weeks. In one case, virulent bacilli were found seven weeks after disappearance of the exudate. The cases are kept under supervision until the bacilli have disappeared. Sometimes they disappear first from the nose; at other times, first from the throat.

11. In fourteen families, with forty-eight children, where little or no isolation of a case of diphtheria in each family was undertaken, virulent diphtheria bacilli were found in 50 per cent. of the children, of whom 40 per cent. later developed diphtheria. The bacilli were found in less than 10 per cent of the children in families where the case of diphtheria was well isolated.

Antiseptic irrigation and cleansing treatment of the throat lessens the liability of those thus exposed to develop diphtheria.

All members of an infected household should be regarded as under suspicion, and where isolation is not enforced the healthy as well as the sick should be prevented from mingling with others until cultures or sufficient lapse of time give the presumption that they are not carriers of contagion.

12. Diphtheria bacilli may be present and multiply in the throat without causing symptoms or lesions. They must find susceptibility to their pathogenic action in order to cause diphtheria.

13. In three hundred and thirty persons who gave no history of direct contact with diphtheria, virulent diphtheria bacilli were found in eight, of whom only two subsequently developed diphtheria. Bacilli, indistinguishable morphologically or in cultures from the diphtheria bacillus, including the formation of acid in forty-eight hours in bouillon, but entirely devoid of virulence, were found in twenty-four of these persons, in most of these instances in large numbers. The pseudo-diphtheria bacillus was found in twenty-seven.

14. Instances are given in which the diphtheria bacilli were found on various objects outside of the human body, viz., bed-clothing soiled with discharges of diphtheria patients; the shoes and the hair of nurses in attendance on diphtheria patients, and a brush used in sweeping the floor of a diphtheria ward.

15. Some of the various ways in which the diphtheria germ is transported are summarized.

16. A bacillus in no way distinguishable in morphology or in cultures, including the formation of acid in bouillon, from the usual diphtheria bacillus, but devoid of virulence, exists. The virulence was tested by injecting into half-grown guinea-pigs $1/2$ to 1 per cent. of their weight of forty-eight hour bouillon cultures. This bacillus, although it has been called by some investigators the pseudo-diphtheria bacillus, should not be so designated. It is the genuine diphtheria bacillus devoid of virulence. It was met with in a comparatively small number of cases out of a large number examined. Exceptionally, it may occur together with the virulent diphtheria bacillus in diphtheria, and occasionally it takes the place of the virulent bacillus during or after recovery from diphtheria. In several instances it was found in healthy throats.

The name pseudo-diphtheria bacillus should be confined to bacilli which, although resembling the diphtheria bacillus, differ from it not only by absence of virulence, but also by cultural peculiarities, the most important of the latter being greater luxuriance of growth on agar and the preservation of the alkaline reaction of bouillon cultures. The pseudo-diphtheria bacillus may render bouillon cultures acid in forty-eight hours when grown anaërobically. The pseudo-diphtheria bacillus in this sense was found in a number of cases, but not frequently. It is probably of different species from the genuine diphtheria bacillus, and is without diagnostic importance.

White, A. Campbell. (New York.) Treatment of Diphtheria. (*Med. Rec.*, N. Y., 1894, xlvi., 546.)

The conclusions derived from this series of cases, together with investigation and observation on a much larger number of cases, lead us to believe:

1. That frequent washing of the air-passages attacked by diphtheria lessens the duration and amount of diphtheritic membrane.

2. The addition of antiseptics, in sufficient strength to be germicidal, to the irrigating fluid is irritating to the mucous membrane, thereby causing extension and persistence of false membrane rather than the effect desired.

3. The addition of antiseptics to the irrigating fluid is liable to cause systematic poisoning and disagreeable complications from the swallowing and absorption of some of the fluid used, *e. g.*, the two bichloride cases cited above.

4. Spraying the throat (also the pernicious treatment of swabbing), whatever solution is used, can have no good effect, as the parts reached by the spray must necessarily be very limited, excepting possibly in the hands of an expert. Furthermore, the spray cannot be used with young children, as any one can testify who has tried it. This is especially true of some solutions where it is necessary to use a glass syringe.

5. Frequent cleansing of the throat and nasal cavities with a bland solution, such as plain warm water or normal salt solution, is easier of application, is more agreeable to the patient, and does all that any antiseptic solution can accomplish, either upon duration of the membrane or the period of isolation.

Sclavo, Achille: Diphthera in Italy. (*Gazzetta degli Ospedali e delle Cliniche*, October 20, 1894.)

The author presents an interesting statistical study of diphtheria in Italy for the years 1887 to 1892 inclusive.

During that period the number of deaths fell from 24,637 to 13,434, the smallest number being 12,284 in 1890. The disease is very unevenly distributed throughout the peninsula, the mortality ranging from 1.8 per 10,000 in the marshes to 15.8 per 10,000 in the province of Basilicata. The mortality in the country districts is much higher than that in the cities. As regards seasons the disease prevails especially in the winter, the mortality figures for the four seasons being as follows: Winter, 10,945; spring, 9,293; summer, 7,315; autumn, 8,320. The greatest number of deaths occurred in children between one and five years of age, the preponderance of males over females being very slight.

Hatch, Theo. L. (Owatonna, Minn.): An Anomalous Case of Diphtheria. (*Northwest. Lancet*, St. Paul, 1894, xiv., 330.)

The patient was a boy, aged thirteen years, and on the second day of the sickness the exudate appeared on both tonsils, with a temperature early in the day at 107°. On the morning of the next day his temperature ran up to 110°, and at this time his throat became entirely clear of membrane, but he developed all the symptoms of acute cerebro-spinal meningitis, pain in the head, with head drawn back, pupils dilated, and for forty-eight hours he was raving crazy, laboring under high maniacal excitement.

During all of this time his pulse was nearly normal. He presented all the evidences of a person suffering from a highly septic condition. When the cerebro-spinal symptoms subsided the entire fauces became covered with diphtheritic exudate.

At this time also the patient lapsed into a condition of stupor, bordering upon coma, but there was no time but that he could be readily aroused. At this stage of his sickness there was also a marked crisis, and the patient came very near succumbing to heart failure. There was evidence of a weakened heart's action for weeks afterwards.

The day following the subsidence of the cerebro-spinal symptoms, there was a peculiar bad odor from the body, the abdomen became mottled and dark colored, there were profuse discharges of diphtheritic membrane from the bowels, accoompanied with very painful tenesmus, and it looked as though we were destined to have a fata termination from septicæmia. At one period the respiration was somewhat affected, though not seriously. At no time was the function of the kidneys impaired in the least.

The throat gradually cleared up and all dangerous symptoms subsided, though the convalescence was slow on account of the weakened heart's action. At one time the left parotid gland became inflamed and swollen, but did not suppurate.

Sclavo: The Immunization of Chickens Against the Diphtheritic Bacillus, and the Passage of Immunizing Substances Within Their Eggs. (*Gazz. degli Ospedali*; July 14, 1894. *Am. Med. Surg. Bull.*, 1894, vii., 1243.)

It is well known that chickens and pigeons are very susceptible to the diphtheritic bacillus. The author communicated to the Royal Academy of Medicine of Turin some interesting experiments carried on to see whether these fowls could be protected. He was successful in his endeavors, both by the Fränkel method (virus attenuated by high temperature) and the method of Behring (trichloride of iodine.) He also succeeded in establishing immunity by injections of filtered cultures of graduated strengths. Most interesting, however, is the fact that, in a certain number of hens so treated, he invariably found that the eggs possessed an immunizing property, which is manifested both by the albumin and the yolk. He diluted small quantities of egg with equal amounts of normal salt solution, and succeeded in immunizing guinea pigs with this preparation.

The author is now investigating whether guinea pigs may be immunized by feeding them with eggs thus obtained.

Casello, J. B: Treatment of Diphtheria as Indicated by Its Etiology and Pathology. (*Cincinnati Lancet, Clinic.* 1894, lxxii., 469.)

For local treatment the best results are obtained from peroxide of hydrogen. He generally dilutes it to twice its volume and renders it alkaline shortly before using with the bicarbonate of sodium, and sprays the parts thoroughly every hour until the throat and nose are clear and the membrane disappears.

He has had good results from the internal use of turpentine, but alcohol and food are the most important aids. He reports a successful case after the use of Behring's antitoxin.

Chambard-Henon: Cold Baths in Pneumonia. (*Journal des Practiciens,* October 6, 1894.)

The cold bath treatment in pneumonia is held in much esteem in Lyons. The author, who is a firm believer in its efficiency, reports the following case: A boy, three and a half years old, was suffering from a very severe double pneumonia, having a rapid pulse, respiration 50 to the minute, rectal temperature 105.4° a blowing sound and subcrepitant râles over both lungs, œgophony, anuria, etc. The first day three baths at a temperature of 93°, each of five minutes' duration were given, cold compresses being applied at the same time to the head. The second day eight baths at a temperature of 90°. The third day the temperature of the baths was reduced to 82°, one bath being given every four hours. The same treatment was continued on the following days, thirty-two baths at a constantly decreasing temperature being given. The child made a good recovery.

Kisel, A. A.: Hysterical Anorexia in a Child Eleven Years of Age. (*Meditsinskoe Obozrenie,* No. 17, 1894.)

The author quotes a number of authorities to show that hysteria in young children is not of very rare occurrence, but he has been able to find only a few cases reported in which the disturbance manifested itself by anorexia. His case was that of a girl, eleven years and nine months of age, who was brought to the pediatric clinic of St. Olga's Hospital in Moscow. Her mother stated that for eight months she had eaten scarcely any food, and was taking less and less each day. The appearance of the child bore out this statement, for she was a perfect skeleton. The adipose tissue was everywhere absent, the muscles were wasted, the bones stood out, and the skin could be pinched up in great folds. Sensation was normal, and the cutaneous reflexes were preserved. The child was greatly exhausted. She weighed forty-nine pounds. There was a neurotic family history, the father being addicted to alcohol, and the mother being hysterical. The father and a number of other relatives on both sides of the family had died of pulmonary tuberculosis. Three years before the appearance of anorexia the girl had had a great disappointment, having failed to enter a school where her sister was. Soon after that her disposition changed, she avoided her playmates, was silent and always sought solitude. When she first began to take less food it was not for want of appetite, for she would seem to be hungry but refused food, saying that she was ashamed to eat so much. She ate gradually less and less, finally taking almost nothing. But though she became very weak and emaciated she did not appear to be ill. At the time when she was brought to the clinic she positively refused all food and could be induced only to take a very small quantity of milk. Her temperature at this time varied from 95° to 98° F. Treatment by hypnotic suggestion was tried at first, but after repeated failures was abandoned. Then resort was had to forcible feeding, but she resisted with all the strength she had, and it was only with the greatest difficulty that a little food could be forced down her throat. She was then received into the hospital and kept away from her family, and soon became more manageable and could be induced to take food in gradually increasing quantities. She immediately began to increase in weight and improved steadily in spite of intercurrent attacks of influenza and measles. In four weeks she had gained thirty pounds, was cheerful, talkative, and fond of company.

Poli, C.: The Hearing of New-Born Children. (*Arch. Ital. di Otol.*, *Bo*ston, M. & S. J., 1894, cxxxi. 460.)

According to Preyer, who has made some of the more recent researches upon the hearing of new-born children, it is possible, during the first two hours following birth, to make loud sounds, such as the clapping of hands close to the ear, shouting and the like, without producing any evident reaction in the child ; in other words, there exists in the newly born a physiological deafness which lasts until about the fourth day.

For the purpose of exact comparison with these results, Dr. Poli has made a series of investigations in twelve new-born children, one delivered at the seventh month and the others at full term. The examinations of the children were made during the first three days of life, and preferably during the first five hours. In one case the test was made at the moment of the expulsion of the child. The result showed that the children born at full term were fully capable of perceiving during the first moments of life all such auditory excitation as would be produced by whistling, tapping and similar high-pitched sounds. The reaction obtained varied from a simple contraction of the eyelids to slight muscular movement extending over the whole body. High-pitched sounds were those first perceived. In the case of the child born before the full term sounds made under the most favorable conditious produced no reaction whatever.

The difference in the results in degree in the individual cases depends probably upon the condition of the sound-transmitting apparatus, the fact being that the gelatinous mass which fills the tympanic cavity does not change immediately after birth, but remains a greater or less length of time, and in the case above mentioned of the infant born before the full term it did not disappear until the twentieth day. If, therefore, the existence after birth of a period of physiological deafness is admitted, it is probably to be explained by an obstruction to the passage of sound waves through the middle ear, and not by an early deficiency in the sound-perceiving apparatus.

Cope, C. S. (Ionia, Mich.) Infant Feeding: (*Food*, N. Y., 1894, v., 139.)

Milk from the mother if we can, from the cow if we must, is nature's food for infantile life. Bottle feeding is wrong and very often productive of harm ; while drinking from a spoon, and later from a cup, is a more cleanly, rational and hygienic one. The milk should always be warmed before using; a large cloth under the baby's chin, a small cup with thin edge, and reclining, semi-erect position in the nurse's arms are the requisites for infant feeding.

Having passed through the one cow period, and the boiled flour and grated ball period, and the infant food period, and the sterilizing period, all of which were times of vexation and trouble of soul to the physician, and sick days, griping pain, loose bowels, midnight colic, emaciation, marasmus, enterocolitis, and often death in the infantile world, he finally adopted condensed milk as the only proper artificial food, since which time the above evils have been largely avoided. In fact, where instructions are faithfully carried out diseases of the alimentary canal are avoided.

Rowland, F. F. (Pasadena, Cal.) Quinine the Physiological Remedy for Enuresis when Circumcision Fails. (*So. Cal. Pract.* 1894, IX, 324.)

Two cases are reported, a boy aged six and a half years, and a girl aged thirteen. Both suffered much from enuresis, and both improved rapidly on large daily doses of quinine.

Muehleck, George A.: A Report of Four Cases of Diphtheria Treated by Anti-Toxin. (*Courier of Med.*, St. Louis, 1894, xi., 209.)

He reports six cases of diphtheria. Two, aged respectively eleven months and six years, did not receive the anti-toxin, and both died. Three cases, one a laryngeal case and all severe, received the anti-toxin and all recovered. One case, a sister of the other children, had a red pharynx and Klebs-Loeffler bacilli in the throat, but the congestion of the throat cleared up after a second injection of the anti-toxin.

Goodhart, James F.: Common Diseases Mistaken or Mistreated. (*Lancet*, London, 1894, ii., 841.)

He spoke of scurvy as being a very common disease in children, and although such cases are often enough recognized, they are constantly allowed to go unrecognized, and pass as rickets, or rheumatism, or injury, or temper, or "pure cussedness," and so on. He thought the cause was usually due to keeping a child too long on condensed milk or feeding too liberally upon one or other of the infant foods. Condensed milk is an excellent food for infants upon proper occasion, but its constant use should not be continued too long. However scurvy will sometimes appear with any of the foods, even the best of them. The remedy is pure milk, raw meat juice, good vegetable broths and orange juice as regards foods, and absolute rest in bed with a little opium, if necessary, for the pain. They generally recover speedily but not always. It has twice happened to him that after giving a very hopeful outlook, the child has died suddenly the next day. In neither case did the child look worse than many another who did perfectly well. Therefore, until the child has taken to its change of diet and begun to mend it is as well to speak guardedly.

Colson, Charles: Spontaneous Gangrene in a Child Four and Half Years of Age. (*Annales de la Société Medico-Chirurgicale de Liege*, Nos. 8 and 9, 1894.)

A boy, four and a half years old, was admitted to hospital for treatment of typical dry gangrene affecting the terminal phalanges of the index and little fingers of the left hand. The line of demarcation was not well marked and presented no inflammatory redness nor suppuration. There was a dilatation of the subcutaneous veins of the lower portion of the anterior surface of both forearms, of the temporal regions and of the anterior surface of the chest. It was very difficult to examine the sensibility in this case, but it seemed to be diminished in the affected hand, although the child suffered from rather violent but evanescent pain in his hand. There was a slight degree of œdema below the malleoli of the left ankle. The abdominal and thoracic organs, with the exception of the heart, were normal. There was a purring diastolic thrill limited to the auscultation area of the pulmonary orifice ; at the same time a diastolic rasping sound was heard over this area preceded by the second aortic sound when the ear was carried toward the left border of the sternum ; there was evident hypertrophy of the heart. The urine was albuminous. The child was very pale, rather emaciated, with good appetite and digestion ; he had had a mild attack of measles the year before, and had since then suffered from dyspnœa and cyanosis upon exertion. During the stay of the child in the hospital he had an attack of swelling and cyanosis with spontaneous pains in the healthy finger of the left hand, symptoms, in brief, similar to those of Raynaud's disease. It was feared that gangrene would set in, but the symptoms subsided in a few days. This was followed later by a thinning of the skin, thickening and furrowing of the nails, and other evidences of trophic disturbances. The author discussed the various possible causes of the condition and decided that it was of nervous origin, presenting a typical instance of a necrotic tropho-neurosis similar, except in the matter of symmetry, to Raynaud's disease.

Holt, L. E.: Treatment of Pneumonia in Infants and Young Children. (*N. Y. Polyclinic*, 1894, iv., 75).

To recapitulate briefly the plan of treatment it is as follows : 1, *Lobar-pneumonia.*—This has so good a prognosis that apart from the complication of extensive pleuritis it rarely proves fatal. In a large number of cases only hygienic treatment is required. The patient is to be kept in bed until the physical signs have cleared up. Oil-silk jacket to be worn throughout the attack, and small doses of phenacetine or antipyrine given to relieve restlessness, cough, etc., when they are unduly severe. Temperature not interfered with unless exceedingly high, then cold pack. Stimulants in most cases not needed. Then alcohol, the dose being regulated by the patient's general condition and pulse. Counter-irritation by mustard if much pain or much bronchitis. Plenty of fresh air in the room throughout the attack. Care not to overdo the matter of feeding when the temperature is high. Watch for pleurisy as the principal complication.

2. *Broncho-pneumonia.*—Patient to be kept in bed until complete resolution. Counter-irritation by mustard. Inhalation of vapor from croup kettle or vaporizer. Stimulants in secondary cases from the outset. In primary cases when indicated by feeble pulse and general condition; pushed in severe cases to tolerance of the stomach. Phenacetine for restlessness, cough, etc. Expectorants are of little value. Emetics used with the greatest discretion. Of the heart stimulants other than alcohol, strychnine is best, then nitro-glycerine and atropine. Frequent changes in position to prevent hypostatic congestion. Quinine only in sub-acute cases with delayed resolution. Careful nursing, with change of rooms twice or three times a day when possible.

Pringle, J. J.: A Case of Actinomycosis Involving the Skin Extensively. (*Brit. Med. Journ.*, 1894, ii., 1,108.)

A boy, aged thirteen, whose family lived until recently over a stable-yard, was admitted, in February, 1894, to the Middlesex Hospital, suffering from an apparently simple attack of serous pleurisy, from which he recovered in a month, with marked retraction of the affected (right) side. Shortly afterwards he was readmitted to a surgical ward on account of abscesses over the front of the chest and right hip, which were considered as tuberculous, and scraped. He returned to the hospital on September 28th, with a very extensive tract of disease implicating the skin, chiefly on the back. The characters of the skin disease were described in detail, the most prominent feature being the presence of large sarcomatous-looking growths, ulcerating at various points, situated upon hard, brawny, and deeply undermined skin. From the ulcerative points pus exuded, mixed with characteristic yellow granules, readily recognized microscopically as composed of actinomyces. There was strong presumptive evidence of invasion of the right lung, pleura, liver, kidney, retroperitoneal and prevertebral tissues. Treatment by iodide of potassium and thyroid tabloids appeared to be attended with benefit, and reasons for the treatment adopted were given. The case was regarded as an example of actinomycotic invasion through the respiratory tract. Special attention was directed to the characters of the skin affection, which differed materially from those of cases described, and points of differentiation from other skin affections, which most closely resembled it, were laid down.

McBrayer, L. B. (Asheville, N. C.): Pilocarpine in Urticaria. (*Med. Rec.*, N. Y., 1894, xlvi., 564.)

He reports the case of his own son, two years and nine months old, who was cured rapidly by one dose of $^1/_{16}$ grain of pilocarpine muriate.

Patterson, A. Bethune. (Atlanta, Ga.): Spontaneous Cure of a Nævus Maternus—Large Vascular Tumor Occupying the Side of the Neck. (*Southern Med. Rec.*, 1894, xxlv, 477.)

The growth was first noticed a few days after birth. It was the size of a small pea and situated at the back of the ear in the angle formed by the ramus of the lower jaw and the mastoid process. At two months it was the size of a plum and at four months it measured eight inches in circumference. At one year it occupied nearly the entire side of the face and extended down the neck to the clavicle. At one and a half years it reached its greatest size, it remained stationary for six months, and at two years it began to decrease in size, so that at ten years it was the size of an almond and at twelve years nothing could be felt of the growth.

Hallopeau, H.: Multiple Cutaneous and Subcutaneous Abscesses in Young Children. (*Annales des Dermatologie et de Syphiligraphie*, Nos. 8 and 8, 1894.)

The author reports the case of a child, eight months old, who suffered from mutltiple recurrent abscesses of the skin, there being at one time at least fifty present in different parts of the body. Bacteriological examination showed the presence of the staphylococcus aureus. From a study of this case, of another also observed by himself, and of two reported by Escherich and G. H. Roger, Dr. Hallopeau formulates the following conclusions: 1. The skin of infants presents a favorable soil for the growth of microbes of suppuration, especially of the staphylococcus aureus; 2. Following accidental lesions, the skin may become the seat of multiple abscesses, involving the entire surface of the body and recurring frequently for months; 3. Subcutaneous abscesses may be simultaneously developed; 4. There is no reason for invoking a constitutional cause in such cases—there is no pyæmia; 5. The process is one of auto-inoculation, the points of entrance of the micro-organism being very probably, as Escherich suggests, the glandular orifices; this is quite certainly the case when the suppurative lesions assume the character of phlegmonous adenitis described by Verneuil; 6. The deep situation of the sudoriparous glands explains the production of the subcutaneous abscesses; 7. The disease may be mistaken for syphilitic gummata or for tuberculosis; 8. In exceptional cases the affection may be observed in adults.

Editorial: The Paralyses of Infancy. (*La Riforma Medica,* Vol. iii., No. 72, 1894.)

Painful Paralysis of Children.—This affection, which is not a bone paralysis, was described by Chassaignac in 1855, and attention was again directed to it by Brunon a year ago. It is a temporary functional paresis, of which pain constitutes the essential symptom. The prognosis is good. The diagnosis is made from the pain and the rapid onset of the affection conjoined with the fact that there is no lesion of the joints or bones.

Syphilitic Pseudo-Paralysis of Parrot.—This is a form resembling true paralysis belonging to early childhood. The epiphyses are attacked as a result of the syphilitic process. The affected limb appears to be wholly paralyzed, and there would seem to be complete luxation, as the symptoms recall those of fracture or sometimes of acute articular rheumatism. The extremities alone are affected, and never the muscles of the face, of the neck or of respiration; there are no disturbances of sensation. The sphincters are unaffected, and electrical examination gives negative results. The pain, which is sometimes intense, is excited only by movements of the limb. The separation of the epiphyses is very evident though crepitation cannot always be obtained. The diagnosis rests upon the discovery of syphilis in the child or its parents.

Cerebro-spinal Syphilis is of later occurrence; the paralysis involves the face as well, but the above-mentioned symptoms are absent.

Syphilitic Paralysis of Peripheral Origin.—The diagnosis of this condition rests upon the fact of the integrity of the bones, and upon the modified electrical reaction. When the signs of syphilis are not evident the differentiation from infantile paralysis is made by the fact that the latter occurs suddenly with fever, generalization of the paralytic phenomena, and absence of pain.

Little's Disease is a congenital spasmodic paraplegia of the four extremities, most pronounced in the lower, occurring in children born before term ; it is characterized by a spasmodic condition, but unaccompanied by convulsive phenomena or psychic disturbances ; the affection is capable of improvement if not of cure. Spasmodic tabes, on the other hand, is manifested during adolescence and has a tendency to grow worse.

Spasmodic Infantile Hemiplegia is a congenital affection, or at best manifests itself very early. It begins with convulsions. The development of the skeleton is arrested ; the paralysis involves the face, the extremities and the trunk. There are choreic or athetosic movements with convulsive crises which, when bilateral, resemble true epilepsy. There is a loss of intelligence, if not actual idiocy. Cysts, porencephalia, areas of softening, cerebral or meningeal hemorrhages, meningo-encephalitis, and atrophic or hypertrophic sclerosis enter into the etiology of the affection.

Friedreich's Disease, or hereditary ataxia, does not present phenomena of motor incoördination ; there are nystagmus and disturbances of speech. It is not a congenital affection. The fulgurating pains, anæsthesia and trophic disturbances of locomotor ataxia are wanting. This is a vertiginous condition.

Primary Myopathies.—Pseudo-hypertrophic paralysis and atrophic myopathies are forms occurring in early childhood. Thomsen's disease is a congenital form, characterized by spasmodic rigidity of the voluntary muscles occurring at the beginning of movement and disappearing later.

Infantile Paralysis is an affection due to primary changes in the cord occurring in early childhood. It is a paralysis with initial fever, affecting at first many muscles and localized later in certain individual muscles or groups. There are no disturbances of sensation, and the intelligence remains intact.

Pott's Paralysis is frequent in childhood and youth. It follows most commonly disease of the dorso-lumbar vertebræ.

Diphtheritic Paralysis is easy of diagnosis when the previous occurrence of diphthera is known. An importent symptom is the dysphagia and the regurgitation of food through the nasal fossæ.

Paralysis following Measles has not yet been studied to any great extent. It occurs during the period of convalescence, affects the paraplegic type, and is curable, lasting at the most for six weeks.

Obstetrical Paralysis is caused by trauma inflicted during birth; there may be paralysis of the brachial plexus or facial paralysis.

Hysterical Paralyses.—In paralyses of this nature the reflexes are not abolished. The diagnosis must be made by exclusion.

Choreic Paralysis.—Chorea is occasionally complicated by paralysis which affects the hemiplegic or the monoplegic form. Sometimes the paralysis precludes the choreic phenomena, and a most careful examination may be necessary to discover some slight movements indicative of chorea. Uusually, however, the diagnosis is easy, as the paralysis most frequently occurs while chorea is present or during convalescence.

Turner, Robert. (Liverpool) On Cases of Infantile Diarrhœa Complicated by Acute Nephritis. (*Practitioner*, London, 1894, liii., 263.)

These remarks were based upon three cases, all under one year of age and having diarrhœa for more than a fortnight. They were all rickety children. Patient No. I seemed to do well under treatment until the fourth day, when there appeared swelling of the feet and under the eyes. The swelling increased, the amount of urine decreased, and the child died on the fourth day with the usual symptoms of uræmia. Co-incident with the œdema of the feet and legs, there was an improvement in the diarrhœa, and bile staining was almost absent. Case No. II. ran a similar course. The urine contained albumen, and death took place on the fifth day after the appearance of the œdema. Patient No. III. lingered a week, and before the end œdema was extreme; but no "dropsy" could be made out. In no case could a history of scarlet fever be obtained or exposure to cold. In all the cases there was great improvement in the diarrhœa on the appearance of the kidney trouble. It seems improbable that the drugs, which were given, set up the nephritis. Certain organisms in the intestines may have elaborated certain ptomaines and alkaloids which were carried off by the bowels as long as the diarrhœa existed, but when this was checked, they may have been absorbed and eliminated by the kidneys.

Variot, G.: Anasarca without Albuminuria. (*Journal de Clinique et de Thérapeutic Infantile*, October 18, 1894.)

A girl, seventeen months old, was brought to the clinic for relief of a very excitable nervous condition. She had been brought up in the country, and had been fed largely on goat's milk. When returned to her parents she was slightly rachitic and was extremely irritable. Dr. Variot prescribed sterilized milk and eggs, and a potion containing bromide of potassium. The nervous excitement was quieted a little, but a few days later the mother noticed that the face and extremities of the child were swollen. Examination showed pronounced œdema of the eyelids, thighs, legs, and hands. The infant had not had scarlatina, the heart sounds were normal, and the urine was free from albumin. A week later the anasarca was diminishing rapidly. The author could offer no explanation of the condition.

Roy, Philip S. (Washington, D. C.): The Temperature of Two Children during Spasms. (*Med. Rec.*, N. Y., 1894, xlvi., 495.)

These two cases are offered to support the views of Landois and others in relation to the probable proximity of the heat centres to the motor centres in the brain.

CASE I.—A white child, five years of age, in the second week of typhoid fever commenced to have spasms confined almost entirely to the right side. When first seen the left side was hot and dry, the right (the side of spasms) was cold and covered with perspiration, the temperature of the left axilla was 103°F., and in the right axilla $105^2/_{10}$ F.; after spasms were controlled the temperature was the same on both sides. The right side was completely paralyzed. The child lived six days.

CASE II.—A white child, aged four months, suffering with marasmus, had general spasms, the surface was cold, each spasmodic seizure lasted about three minutes followed by a period of rest lasting ten to fifteen minutes. During spasms the temperature was 108° F., and during the period of rest 103° F. The child lived six hours after the first spasms occurred. Two cases cannot go far in proof; but if the subject has not already been investigated clinically they may suggest to others a similar line of investigation.

Fenlard, H.: Treatment of Seborrhœic Eczema in Children. (*Journal des Practiciens*, No. 23, 1894.)

The treatment of this condition falls into two divisions, the dietetic and the local. Children with this affection should be put on a milk diet, and later, if the age permits, eggs may be allowed. No other food of any description is to be permitted. In the local treatment the crusts must first be removed by lotions of tar water or by yeast poultices. The compresses wet in a solution of resorcin (6-1,000) are applied to the head continuously, and to the face several times a day. At night these lotions are replaced by inunctions of one part of balsam of Peru in thirty parts of vaseline. These inunctions are followed by dusting with very fine starch powder or by a mixture of equal parts of starch and subcarbonate of bismuth.

Sevestre: The Anti-Toxin Treatment of Diphtheria at the Trousseau Hospital. (*B st. Med. & Surg. Journ.*, 1894, cxxxi., 547.)

Dr. Morrill sends the following extract from a personal letter dated November 13th:

"In a few words, at the expiration of twenty-four to thirty-six or forty-eight hours after the injection, a peeling and disintegration of the membrane, a return of appetite; in case of croup, possibility of deferring tracheotomy, and when it proves necessary, the frequent possibility of removing the tube at the expiration of one or two days. A mortality (counting even the cases which die a few hours after entering the hospital) of 12 to 13 per cent. instead of about 50 per cent., which is the average during preceding years at this same season. You see this is sufficiently encouraging; but a cure in all cases is not to be looked for, and perhaps there are some little inconveniences attending the treatment. This last is a point to be studied."

Hollopeter, W. C.: Therapeutic Notes on Whooping Cough. (*Therap. Gaz.*, 1894, xviii., 658.)

He invites attention to *three* very important factors in the treatment of whooping-cough:

1. The early recognition of the disease before the

spasmodic stage, suggested by puffiness under the eyes. Then hydrogen peroxide, or possibly cocaine, applied locally. In very young children the treatment is sometimes abortive.

2. The use of belladonna pushed to toxic effects in the second stage is very valuable.

3. Out-door life, sea-shore the best, if the foregoing are not effective.

Augustin, I.: A Case of Exencephalus. (*Spitalul*, No. 15, 1894.)

The case was one of a fœtus born at term of a mother with good personal and hereditary history; the three previous accouchements had been normal, and the children were healthy and well formed. The eyes of the monster were projecting but covered with the lids, and the pupils were well formed; the nose was flat and the nostrils flaring; the buccal cavity was enormous, the tongue projecting. The forehead was wanting. The cranial vault was absent, being replaced by an irregular pocket, partially covered with hair, of an ovoid shape. The lamina of the vertebræ were absent all the way from the occiput to the lumbar region.

Kauffmann, O. J.: Cases of Pulmonary Abscess Simulating Empyema. (*Birmingham Med. Rev.*, 1894, xxxvi., 222.)

Two cases are discussed. The first was a boy who suffered from suppuration in the mastoid cells and secondary abscesses in the lungs, of which complication he died. On removing the lungs, there appeared to be on each side an empyema, limited from the general cavity of the pleura and much greater in extent on the left side than on the right. The corresponding areas on the surfaces of the lungs and on what appeared to be the cortical pleura were seen to be covered, so far as the apparent empyemas extended, with granulations secreting pus. The apparent empyema cavities were, however, very shallow, and the lungs were almost in contact with the chest-walls. The lungs contained numerous abscesses.

The most striking fact was that the apparent empyemas contained pus—though only a very small quantity—which resembled that found in the cavities in the lungs. No communication could be found on either side between the empyemas and the lung or bronchi.

The curious appearances and characters just described were elucidated by the second case—that of a child which died of suppurative periostitis of the femur and tibia complicated by acute pericarditis and suppuration, in the form of many small scattered foci, in both lungs. There were no large cavities, and again, a great number of the abscesses were found lying close underneath the pleura. On removal of the lungs, there appeared numerous patches of suppuration, apparently between the parietal and the visceral layers of pleura, but none of these patches reached the diameter of half an inch. In every respect, except size, they resembled the apparent empyemas described in the last case, but their mode of origin here was plain.

A number of the pulmonary abscesses were perfectly superficial, shining through the thinned pleura and not invading the lung tissue. They appeared to have taken their origin in and to have remained limited to the delicate connective tissue of the deepest layers of the pleura. These appearances made clear the presence of several suppurating foci, which, at first sight, gave the impression of lying in the pleural cavity. This deceptive appearance was evidently produced by the cohesion, by inflammation, of parietal and visceral pleura over the superficial abscesses of the lungs, and the tearing necessary in removing the lungs had caused the visceral layer to be left upon the parietal, thus laying open the shallow abscess-cups on the surface of the lungs and leaving the pulmonary surface of the pleura exposed on the chest wall.

II.—SURGERY.

Hauck, Louis. (St. Louis.): Intubation. (*Med. Rev.*, St. Louis, 1894, xxx., 381.)

He reports seven cases of intubation with four recoveries.

Dalziel, T. K.: Child, Aged Five Months, from Whose Liver a Darning Needle, Three Inches Long, was Removed. (*Glasgow Med. Journ.*, 1894, xlii., 457.)

The patient, aged five months, was brought to the hospital with a sinus at the right hypochondrium, which, according to the mother, had existed for two months, and for which she knew no cause. The sinus was found to pass in the direction of the gall-bladder, and at a depth of about two inches the probe struck against something hard. The child was sent to hospital the same day.

Under chloroform, Dr. Dalziel enlarged the opening, and, on breaking down a small adhesion, the gall-bladder came into view, as also the general cavity of the peritoneum. Further manipulation revealed a small opening on the surface of the right lobe of the liver, up under the costal margin, and, finally, after some difficulty, a darning needle, $3^1/_4$ inches in length, was drawn out. It lay horizontally, and the point of it was inwards and towards the left. The wound was partly stitched, and stuffed with iodoform gauze. The child made a satisfactory recovery, and was dismissed well on 28th October.

Dalziel, T. K.: Child, Aged Two Years, on whom Nephrectomy was Successfully Performed. (*Glasgow Med. Journ.*, 1894, xlii., 458.)

D. M'K., æt. $2^5/_{12}$, was admitted on 26th September, 1894, to the Royal Hospital for Sick Children, Glasgow, with a history of tumor at the left side of abdomen, which had been first noticed by a doctor five months previously. At that date hæmaturia was observed, but not subsequently. The tumor had since increased very considerably in size, but the child's health had not deteriorated much.

Examination on admission revealed a large, somewhat irregular, movable tumor in the left flank, extending beyond the middle line. *Operation.*—Under chloroform, Dr. Dalziel opened the abdomen by an incision extending from the costal margin nearly to Poupart's ligament, in about the nipple line. The posterior layer of the peritoneum was incised, and the tumor shelled out, the pedicle being ligatured with silk. Some of the prevertebral glands were thought to be enlarged, but were not removed. Operation lasted twenty-seven minutes. The child made an uninterrupted recovery, and was dismissed on 26th October, apparently quite well.

Dr. R. M. Buchanan, who had examined the tumor, reported as follows: "The specimen submitted for examination is a large tumor involving the left kidney, the whole mass having a very remarkable resemblance in size and shape to the fœtal head at full time. There is a surface of kidney tissue at one end of the tumor, representing about one-half of the organ very much expanded, and presenting several nodular prominences of tumor growth. This forms the facial portion of the presentment. The other half of the kidney is replaced by a large, ovoid, semifluctuant tumor, the smooth fibrous covering of which is continuous with the renal capsule. On section the kidney surface mentioned is found to consist only of a mere rind of renal tissue enclosing several areas of yellowish-white new growth. The semifluctuant mass is surrounded by a dense fibrous capsule, and consists mainly of a number of cyst-like cavities, filled with very dark brown flaky fluid, and of a certain amount of intervening tumor tissue undergoing degeneration. In one of these cavities there is a mass of blood clot of a comparatively recent date. Microscopic examination of the tumor tissue reveals the structure of spindle-celled sarcoma. It is traversed by prominent strands of fibrocellular tissue, similar to and continuous with the capsule of the tumor."

Bell, James: An Appendix Containing an Ordinary Pin as the Exciting Cause of a Perforating Appendicitis. (*Canada Med. Rec.*, 1894, xxiii., 33.)

Dr. Bell presented the specimen to the Montreal Med.-Chirurg. Soc., and gave this history. The patient, a boy, aged six, had been brought to the Royal Victoria Hospital with the usual symptoms and signs of appendicitis with abscess formation. There was a history of two days illness. The child was operated upon, and made a good recovery. On slitting up the appendix a pin was found lying transversely across its lumen near the apex. The head of the pin had perforated (by ulceration) all the structures of the appendix, and the point of the pin had very nearly perforated at the opposite side, and at this point the appendix was strengthed by a mass of adherent omentum. This was the only case which Dr. Bell had seen with an actual foreign body as the exciting cause of the disease—except possibly a foreign body may have been the starting point of some of the enteroliths so frequently found in the appendix.

Phillimore, R. H.: Impaction of a Foreign Body in the Œsophagus. (*Med. Rec., N. Y.*, 1894, xlvi., 731.)

The patient was eighteen months old, the foreign body was an English farthing, and it was spontaneously expelled after remaining in the œsophagus nineteen days. That the coin was impacted in the œsophagus there can be no reasonable doubt, and the case is instructive as indicating the difficulty of detecting foreign bodies in this situation, and also the length of time which may elapse without injury to the tube in which they are lodged.

Dodge, F. A. (**Le Sueur, Minn.**): **A Case of Vesical Calculus.** (*Northwest. Lancet,* 1894, xiv., 458.)

The patient was a girl, nine years old, and the stone was removed per urethram. The calculus weighed eight drachms, and the patient made a rapid recovery. The points of greatest interest in the case were the large size of the calculus, the extreme dilatability of the female urethra, and the absence of any symptoms, so far as the parents could observe, of bladder trouble until within six weeks of the removal of this large stone.

Seelye, R. H. (**Springfield, Mass.**): **A case of Spina Bifida.** (*Bost. M. & S. Journ.*, 1894, cxxxl., 438.)

The patient was a rugged looking boy, three years old, with no paralysis or disturbance of function. The tumor, which was gradually increasing in size, was situated over the second lumbar vertebra, twenty-two centimetres in circumference, nearly spherical, tense, fluctuant and translucent. It was somewhat pedunculated, the pedicle being about five centimetres in diameter. It was excised on May 1st, 1894, and the child made a rapid recovery. The tumor consisted of a sac the size of a small orange, composed of tough, white, unelastic fibrous tissue, covered on its lower outer third with skin. The remaining two-thirds consisted entirely of fibrous tissue, which in places was so thin as to be scarcely perceptible between the fingers. The inside of the sac was traversed by many fine fibrous bands and cords, the largest of which contained a jelly-like mass, and extended down into the pedicle.

No nerve elements were found in the tumor. Bacteriologically it was sterile.

Vance, Ap. Morgan. (**Louisville, Ky.**): **Excision of the Knee for the Relief of Crippling from Infantile Paralysis.** (*Am. Therapist,* N. Y., 1894, iii., 59.)

Seven excisions were done upon five patients, varying in age from seven to seventeen years. Two died. His conclusions are:

1st. The danger in these operations is in proportion to the age of the patient, and consequently the degree of fatty degeneration present. 2d. That both these deaths were due to fatty emboli or the absorption of some non-septic material into the blood, which caused the fatal heart complication. 3d. That though the younger cases may be subjected to this procedure with every hope of success both as to function of the stiffened limb and to life, the rule does not hold good in older cases, say after ten or twelve years of age.

Pusey, W. B.: A Report of One Hundred and seven Intubations. (*Am. Pract. & News*, 1894, xviii., 266.)

Of the 107 cases, 48 or 44.8 per cent. recovered. The cases were not selected, and it was agreed that in not one case where intubation failed would tracheonomy have availed.

Beck, Carl (Chicago): Craniotomy in Microcephalus, (*Journ. Am. Med. Ass.*, 1894, xxiii., 642 and 664.)

From a study of two cases in his own practice and seventy recorded cases, the writer concludes that—

1. Craniectomy is a justifiable operation and apt to be successful in the treatment of microcephaly with idiocy.
2. The success depends on the kind of microcephaly and the degree of idiocy.
3. Acquired and late forms give a better prognosis than congenital forms.
4. The danger of the operation is not very great.
5. The operation ought to be quite extensive, that is, the incision in the skull large enough, to permit dilatation, and the circular method of Gersuny ought to be given a trial.
6. The patients must be given a thorough pedagogic treatment afterward.
7. The single cases ought to be followed up for years and reported from time to time.

Mayo, C. H. (Rochester, Minn.): Brain Cysts. (*Northwest Lancet*, 1894, xiv., 394.)

He reports three cases, the youngest being a girl aged eleven years, who was severely hurt about the head in a runaway accident. She was picked up unconscious, bleeding at the ears and nose and vomiting. There was complete right hemiplegia, which continued with the unconsciousness and stupor for eight weeks. During the latter part of the first week there were frequent spasms. After remaining in this condition two months she was brought to St. Mary's Hospital, where, after thorough preparation, the dura was exposed over the left fissure of Rolando using trephine and rongeur, exposing an area one inch by two. There was no pulsation, and upon incision of the dura four ounces of a clear fluid discharged. The brain was depressed over one inch in this region, and the arachnoid formed the inner wall of the cyst. The cavity was drained with cat-gut strands and the wound healed uneventually, and now at the end of nearly a year the girl is attending school, entirely well.

Cowan, Harry J. (Danville, Ky.): Traumatic Peritonitis in Children. (*Am. Pract. & News*, 1894, xviii., 169.)

He reports the case of a boy, eight years old, who made a good recovery, after the abdomen was opened, flushed and drained. He closes by indorsing the following conclusions of Dr. Lydson :

"1. I do not believe in acute primary idiopathic peritonitis.

2. The majority of cases of so-called idiopathic peritonitis in children will be found upon inquiry to be traumatic.

3. Slight injuries of the abdominal wall are relatively more dangerous in children than in adults.

4. Surgical interference is indicated in all cases of severe general peritonitis and cases of localized suppurative peritonitis."

Young, James K., (Philadelphia): Cases Illustrating the Operative Treatment of Iliac (Spinal) Abscess. (*Phila. Polyclinic*, 1894, iii., 465.)

The operation here advocated is performed under strict antiseptic precautions. The abscess is opened by careful dissection ; it is thoroughly irrigated with boiled water and boric acid solution ; a long, grooved director is passed up to a point above the sacro-iliac juncture, and a straight, longitudinal incision is made upon it. A rubber tube is passed through and secured with safety pins. Emulsion of iodoform (10 per cent) ℥ss. is thrown in, iodoform gauze packed about the wound, and a bichloride dressing applied.

Indications : The indications for the operation are : (1) where the abscess is large and making pressure upon important organs ; (2) where the abscess increasing rapidly in size ; (3) where there is danger of rupture of the abscess into the peritoneal cavity.

Mackenzie and Abbott: Subdiaphraghmatic Abscess Communicating with Right Pleura. (*Brit. Med. Journ.*, 1894, ii., 987.)

The patient, a boy, aged ten, was admitted to hospital after an illness of four weeks, the onset of which was sudden and characterised by severe pain in the epigastrium and right hypochondrium accompanied by vomiting. About a week after the onset a swelling had been noticed in the epigastrium. When seen at the hospital there was an acutely rounded and reddened swelling centrally situated in the epigastrium. The right side of the chest gave the physical signs of a pyopneumothorax. Moreover, it was evident that the epigastric swelling freely communicated with the right pleura, for it became much more prominent when the patient sat up or coughed, and then distinctly gave evidence of fluctuation. It was decided to drain the subdiaphragmatic abscess and the empyema by a single opening in the pleura. A portion of the sixth rib was resected just behind the mid-axillary line. Thirty ounces of exceedingly offensive thin watery pus containing some flakes were evacuated. On exploring with the finger the upper surface of the liver was felt through an opening in the fore part of the diagphragm. The whole cavity was well irrigated with warm boracic acid solution and a double drainage tube inserted. The cavity was washed out daily, but the discharge continued to be offensive for several days. On the thirty-fifth day after the operation the wound was almost healed and there was no discharge. The patient left the hospital cured on the forty-seventh day. The lung expanded well, and the only sign to be detected six months later was a slight relative dulness at the base of the affected side. The history of the illness pointed clearly to an abdominal origin. The most probable cause was the perforation of a gastric or duodenal ulcer, and although there had been none of the usual symptoms of the former it was not uncommon for these to be absent in cases which perforated.

Hamill, Edward (Chicago): A Case of Compound Fracture of the Skull. (*Chicago Chinical Rev.*, 1894, iv., 84.)

He was nine years old and sustained a compound fracture of the vault of the skull from the blow of a hatchet which fell from the roof of a two-story house. The depressed bone was elevated and loose pieces removed. He made a perfect recovery.

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Original Communications.

CHLOROFORM ANÆSTHESIA IN CHILDHOOD.

BY EDMUND OWEN, F.R.C.S.

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There is one aspect of operative surgical work which must be of personal interest to almost every practitioner. This is the administration of the anæsthetic, and he knows not at what moment he may be called upon to perform that important duty. Important it is without doubt, but its importance is, I fear, often underrated. Familiarity with chloroform and its administration has bred a certain amount of—I will not say contempt, but I will unhesitatingly say—under-estimation of the importance of the office of the administrator.

Moreover, there are so many ways of administering the vapour that one is almost tempted to think that it does not much matter how it is given, provided only that the patient gets enough of it. And if this is true, or only partly true, of the administration of chloroform in the case of adults, what is one to say in connection with its administration to children ?

I confess that I am sometimes positively alarmed at the casual way in which the anæsthetic is administered. Every newly qualified man—whether he has had instruction in the subject or not—deems himself competent to get and keep a child under chloroform-anæsthesia. And often it happens that whilst I am occupied with the operation I have to keep one eye upon the anæsthetist. "My assistant," says a practitioner who is making final arrangements about the performance of an operation upon a child, "will give the chloroform." And it is when I find that this assistant is about to give the chloroform on what is somewhat generally known as the Edinburgh plan, my apprehension is apt to attain to its maximum. It was only the other day that I was operating in such circumstances. The chloroform was being given by one who had obtained his degrees in the University ot our modern Athens, to the child as it lay asleep in its cot. This was done in the hope—which is, by the by, generally disappointed—that the child might not awaken before he was taken on to the operating-table. As soon as the boy was placed before me on the table, however, my fear was that he would never waken again at all! He had been given in his cot a "knock-down" dose of chloroform on a towel, and he was so thoroughly poisoned by it that not only did he require no more vapour during the entire operation, but it was a long while, after being put back to bed, before he began to recover consciousness. The chloroform had been administered by this gentleman in the way in which he had always seen it done,—"poured on a folded towel, unmeasured and unstinted."

The most illustrious exponent of this method wrote some years ago. "The notion that extensive experience "is required for the administration of chloroform is quite "erroneous, and does great harm by weakening the con- "fidence of the profession in this invaluable agent, and "limiting the diffusion of its benefits." * To this doctrine I venture to take respectful exception.

Up to the present time, I have never seen a child die from chloroform narcosis, but I have seen some children brought by it within an ace of death; and, the longer I live, the more anxious am I that in all my operations the chloroform shall be administered by some one who has special experience in the matter, and who, moreover, fully realizes the importance of the business which he has

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* Sir Joseph Lister, Holmes' "System of Surgery," 2d edition.

in hand. In my own mind, I am absolutely certain that those who have not been duly instructed in the practical administration of chloroform should not push forward to give it. "How boldly," remarked a lady to an experienced huntsman, "those undergraduates ride to hounds"! The old horseman did not dispute the truth of the statement, but briefly replied, "They fears nothing, because they knows nothing." For my own part, I have a constant fear of anæsthetics in operations, even in children. Not a horrible fear, but a right and proper fear. The sort of fear, for instance, which, unless possessed by a man carrying a loaded gun makes him a dangerous companion in the stubble and turnips. But some administrators of chloroform have no fear of any kind. To the neglect of their duty, some of them have been known to allow themselves to become superfluous assistants at, or interested spectators of the operation, or to engage in conversation with by-standers. Surely this is dangerous, and the excuse could not be urged for them that was advanced for some one else, "Custom hath made it in him a property of easiness."

In a recent letter to the British Medical Journal, Dr. Carter, of Weymouth, wrote, "The deaths under anæs-" thetics are truly lamentable, and as I read every one of" these mishaps, I am more thoroughly convinced that" the true cause of the deaths is an over-dose. * * *" I maintain that whatever may be said against the plan" which I adopt" (the administration of the smallest possible amount of chloroform vapour) " it is based on a" scientific plan, which the wholesale baling out of chloro-" form on a well folded towel is not." I entirely agree with Dr. Carter, that children die because they have had too much of the anæsthetic—never because they have had too little. And, unfortunately, the number of deaths in these circumstances is increasing.

The general impression has got about that all that the person has to do who is giving the chloroform is to watch the respiration. This is, in my opinion, a dangerous fallacy. Here is an instance :—

A little while ago I was removing a mass of suppurating glands from the neck of a girl of about five years of age. A special anæsthetist, with whom I had only occasionally worked, was giving chloroform by the aid of an inhaler which hid a good deal of the child's face. In the middle of the operation, Dr. Milson, of Hampstead, who most fortunately was holding the child's wrist, called out, "The pulse has stopped"! Till then there had been nothing whatever, either in the respiration or in anything else, to show that the child was in danger. But we all saw, directly he had spoken, how serious the crisis was. At once we held the child up by the feet so as to insure the passage of blood to the anæmic brain; we opened the windows, and we started artificial respiration and stimulation. Eventually the child "came round" and the operation was duly finished.

I have had several shocks of this nature. But though experience has forced upon me the belief that, in chloroform-poisoning, failure may occur in the heart as well as in the lungs, I have never met with such an unmistakeable instance of it thus beginning.

It is sad to have to admit that fatal accidents in connection with the administration of chloroform, even in the case of children, are occurring with increasing frequency. But so long as people think that chloroform is "perfectly safe" for children, whilst they let it drip through the saturated flannel-mask held over the open mouth, and whilst they dash it wholesale on folded towels and handkerchiefs, there is small likelihood of improvement setting in.

There is always risk in giving chloroform or any other general anæsthetic to a child. But this risk is diminished in proportion as the vapour is administered in a careful manner, and by a well-instructed person. There is, however, no anæsthetic which which is "perfectly safe" for children, and there never will be.

Two children have recently died under chloroform whose deaths have been duly recorded—as, indeed, should be done in every fatal case. One was that of an infant who was being operated on for hare-lip; the other was that of a girl of seven years who was being operated on for post-nasal growths. In each instance blood was found *post mortem* in the bronchial tubes. These sad records justify me in again calling attention to a point which has already been noted, that in these and similar operations the child should be placed in such a position, and such precautions should be taken, that blood cannot gain access to the glottis. For when, under chloroform-narcosis, the laryngeal reflex is abolished, no effort can be made by the child to ward off impending suffocation. In these cases it is far better to give a slightly insufficient amount of chloroform than to have the child "fully under." All that is needed is to know that the child is feeling no pain, and yet is sufficiently quiet for the surgeon. To go further than this with the narcosis is to court danger.

The Treatment of Variola with its Antitoxin.—Passed Assistant-Surgeon Kinyoun has reported to the Supervising Surgeon-General of the Marine-Hospital Service the employment of the blood-serum of a heifer calf, vaccinated four weeks previously, in the treatment of two cases of variola. Fifteen cubic centimeters of the serum were injected subcutaneously when the cases came under observation, and again after the lapse of eight or ten hours. In one case four injections were made, in the other seven. A careful study of the cases, individually and comparatively, led to the conclusion that the treatment exercised a modifying influence upon the disease, especially upon the eruption. One of the cases died, but it is believed that life was prolonged at least seventy-two hours by the treatment. It is suggested that as the serum appears capable of mitigating the attack of variola it ought to have the power of rendering susceptible individuals refractory to the disease.—*Med. News*, *Phila.*, 1895, lxvi., 140.

For Incontinence of Urine:

Sodii benzoati....................	grs. xv
Sodii salicylatis..................	grs. xvij
Ext. belladonnæ..................	grs. xxx
Aq. cinnamomi q. s. ad............	fl ℥ iv

A teaspoonful to be taken four or five times a day.—*Med. & Surg. Rep.*, 1895, lxxii., 157.

SOME PHYSIOLOGICAL FACTORS OF THE NEUROSES OF CHILDHOOD.

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Cincinnati, O.

(*Continued from page* 98.)

III.

Fever and the Variable Temperatures of Childhood. It is a well known fact that children are more prone to fever than adults, and it is also well known that the temperature is more variable in the fevers of infancy and childhood than it is in the fevers of adults. Why this is so, is a question which we now wish to study from a physiologic standpoint. But first let us clearly understand what we mean by the terms high temperature and fever.

By high temperature is meant an increase of the body heat whether it be due to increased heat production or diminished heat dissipation. When high temperature is due to increased heat production it is a symptom of fever, but when it is due to diminished heat dissipation it is not a symptom of fever.

By fever is meant an abnormal increase of those tissue changes by which the normal heat of the body is produced, that is to say an abnormal increase of the chemic changes which result in disorganizing tissues and breaking them up into carbonic acid, water, urea and other products of retrograde metamorphosis.

The fever process is characterized by a chain of symptoms with which every clinician is familiar, the most characteristic of these symptoms is increase of body temperature. But it must be remembered that the height of the body temperature does not always mark the severity of the fever process and that even a severe and wasting fever may exist with a subnormal temperature. One may note at least two reasons why the temperature is not an index of the severity of the fever process. First; increased heat production is but one of the symptoms of fever, that is ordinarily but not necessarily produced by the same causes that produce fever. Second; even should heat production keep pace with the severity of the fever process, heat dissipation may be so rapid or so variable that the body heat at any given time would not be an index of the fever process. With this understanding, the terms fever and temperature will be used as above defined, and we can proceed to study the influence of the nervous system on these processes.

Increased tissue metabolism, which is the one great cause of increased heat production (fever), is under the direct control of the nervous system, and the centres which control this metabolism and indirectly the production of body heat are called heat centres.* Certain of these heat centres have the function of discharging force which will increase tissue metabolism and thereby increase the body heat, they are for this reason called *thermogenic* centres.

Other so-called heat centres have the power of inhibiting or controlling the discharge of force from the thermogenic centres and they are for this reason called *thermo-inhibitory* centres. These thermo-inhibitory centres have no direct influence over the processes whereby the body heat is produced. Yet they are of the greatest clinical importance because of their control over the thermogenic centres.

The thermogenic and thermo-inhibitory centres have their functions so nicely balanced in the normal adult nervous mechanism that, with the aid of the heat-dissipating centres, they are able to maintain the body at almost an uniform temperature under the most adverse circumstances, and this temperature equilibrium can only be disturbed by some maladjustment of this nervous mechanism, which would produce either increase or decrease of the body temperature.

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* Metabolism centres might be a better name for these centres.

Where are These Heat Centres Located?—Ott, Richet, Sachs, Aronson, Wood, Reichert, Girard, Baginski and White agree that the dominating thermo-genic or heat producing centres are situated at the base of the brain in or near the corpus striatum. Eulenberg, Landois, Wood, Ott, Reichert and White agree that important thermo-inhibitory centres are located in the cerebral cortex and they are known as the cruciate and Sylvian centres.

As a prelude to the use of these physiologic data in the explanation of some important clinical phenomena associated with the diseases of infancy and childhood, let us first inquire, what would one expect, in the light of these facts, would be the influence on the body temperature of disease or injury of the parts of the brain containing these centres?

1. *Destruction* of that portion of the cerebral cortex containing the cruciate or Sylvian inhibitory heat centres should cause a rise of temperature because the inhibitory influence of these centres on the basal thermogenic centres would be wholly or partially withdrawn. Experimental physiology confirms this deduction. This is probably the explanation of the fever that follows cerebral hæmorrhage into the cortex, and a partial explanation of the fever of insolation.

2. *Irritation* of these cortical inhibitory centres should cause a sub-normal temperature by strengthening the inhibitory control which they exercise over the thermogenic centres, this is also evidenced by physiologic experiments. We have here an explanation of the sub-normal temperature which may result from cortical meningitis and from hæmorrhage, foreign bodies or depressed bone, all of which may first act by irritating these cortical centres (sub-normal temperature) and later by destroying them, (increase of body temperature).

3. *Destruction* of the basal thermogenic centres should cause a decrease of the body heat. But clinically there

is little opportunity to observe the effect of destructive lesions of this portion of the brain, since any lesion sufficiently severe to destroy the basal heat centres would cause immediate death by the involvment of adjacent centres controlling vital processes. In shock we possibly have an example of sub-normal temperature from partial paralysis of these centres, and in the compression stage of basilar meningitis we may have a sub-normal temperature due to enfeeblement of these centres.

4. *Irritation* of the basal thermogenic centres should cause an increase of body heat, this fact which is proven by physiologic experiment is the explanation of the increased temperature that accompanies the specific fevers.

When are the Heat Centres Developed?—The answer to this question is in great part the answer to the question why are infants and children more prone to high temperatures than adults? The heat dissipating centres situated in the medulla oblongata are well developed at birth, but these centres because of their special clinical importance in infancy and childhood will be given separate consideration later on. Here it is my purpose to note and especially emphasize the time of functional development of the heat-producing and the heat-inhibiting centres.

Before birth the thermogenic centres are in a state of immature functional development. In the human infant born prematurely they are so imperfect that artificial heat is necessary for a time, to keep the body heat up to the normal. In this respect the immature human fœtus resembles cold blooded animals who are more or less dependent on their surroundings for their body heat. But as the fœtus matures the thermogenic mechanism reaches a state of fair development, so much so, that one may say that the thermogenic centres are functionally competent at birth, this of course must be so, since the formation of body heat is a vital process, and is as we have seen probably controlled by the same mechanism that controls the all important process of tissue metabolism. While the thermogenic heat centres have a fair degree of development at birth, they are yet immature and unstable, and are therefore like all the nerve centres in the unfinished brain of the child, more easily excited to abnormal action, than are the mature heat centres of the adult brain. All the nerve cells of the rapidly growing brain of the infant and child are in a state of more or less structural instability since the metabolism going on within them must not only be rapid enough to supply waste but also to furnish material for the growth and development of new cells. This structural and functional instability of the cells make them more irritable and excitable than the nerve cells in the finished brain of the adult. For this reason one would expect to find the thermogenic heat centres of the child more excitable than those of the adult and such in fact is the case. This is one important reason why the temperature of the infant is so variable and unstable under slight disturbing influences and why like causes produce higher temperatures in the infant and child than in the adult.

But important as this normal excitability of the immature thermogenic centres of the child may be, yet of far greater importance from a clinical standpoint is the greatly increased irritability from unfavorable conditions of heredity, nutrition and environment. The thermogenic heat centres of the nervous anæmic delicate child are in a state of abnormal excitability, so that a slight excitation may produce an abnormal discharge of force resulting in fever and high temperature.

But after all probably the most important cause of the instability of temperature in infancy and childhood is to be found in their feeble cortical thermo-inhibitory centres. The thermo-inhibitory centres, like other cortical inhibitory centres previously spoken of, have very imperfect functional development at birth, so that at this time they do not exert a very strong controlling influence over the basic thermogenic centres, and are not able to inhibit these centres from discharging increased energy under slightly increased excitation, for this reason slight causes may produce an elevation of temperature in the infant. Hale White says in speaking of the thermo-inhibitory centres: "In the human adult they are fairly competent and active as is proved by our pretty constant temperature." "In the lower animals and in children they are probably not so completely evolved for I have found that the normal temperatures of rabbits varies several degrees and rapid fluctuations of temperature are common in children even when slightly ill."

Ott in a recent personal communication says: "It seems to me that children are more prone to high temperatures because of a loss of control of the cortical centers"

It is on the whole a justifiable conclusion from all the evidence in our possession that the high and variable temperatures of infancy and childhood are in part due to the normal immaturity and instability of the cortical thermo-inhibitory centres. But as I have previously noted the feeble inhibition in the normal child is not of so much clinical importance as the abnormally feeble inhibition of the abnormal child, this is as true of the heat regulating mechanism as it is of all other nervous mechanisms. The inhibitory part of the heat mechanism in its feeble and unstable state is the portion of this mechanism which suffers most from disease, and in its development is still further retarded by unfavorable conditions of heredity and environment. McAlister says, "The inhibitory is the first portion of the heat regulating mechanism to fail under injury or disease." All of this is quite in accord with the general observation previously made that the amount of energy developed by a nerve cell will depend directly on the amount of healthful chemical metabolism going on within it. The maximum amount of energy being stored up in the well nourished cell and the minimum amount of energy in the starved cell. One can readily understand then how a malnutrition of the nerve elements resulting either from heredity, impoverished blood or bad hygiene can still further weaken the physiologically incompetent cortical thermo-inhibitory centres of the child so as to make it more prone to variable and to high temperatures from slight causes than the normal child is, since in this condition the energy from the thermogenic centres would be discharged under much less restraint from the inhibitory centres than it is in the normal child. It may not be out of place here to state that the best explanation we have for the rapidly varying unstable temperature that not infrequently occurs in hysterical women is, that it is due to the instability of the cortical thermo-inhibitory centres which have given way under the combined influence of environment, bad heredity, bad hygiene, and impoverished blood.

From what has been said the following summary may be made of the reasons why children are more prone than adults to high and variable temperature.

1st. In normal children the thermogenic centres are more unstable and therefore more easily excited than in the adult.

2nd. In normal children the thermo-inhibitory centres are weaker, more excitable and therefore more incapable of exercising proper control over the thermogenic centres, than they are in adults.

3rd. In nervous anæmic children the thermogenic centres are far more excitable than in the normal child, such children are therefore more prone to high and variable temperatures.

4th. In nervous anæmic children the thermo-inhibitory centres are even weaker than in the normal child, and therefore still more incapable of restraining the discharge of force from the thermogenic centres, this is a most important reason for the variable and high temperatures of such children.

(*To be continued.*)

Serum Antitoxin.—The *Law Journal*, December 15th, contains an article which states that provisional protection under the patent laws has been applied for and granted with relation to the production of the antitoxic serum.—*Med. Rec.*, 1895, xlvii., 50.

THE TREATMENT OF PYREXIA IN THE ACUTE DISEASES OF CHILDREN.

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The thermogenic and thermotaxic nerve centres of the child partake of the instability characteristic of early life. As a result of this instability, fever-producing influences act upon the child with an energy not noted in the adult. While a moderate fever in acute diseases cannot of necessity be regarded an element of danger, and while it is rarely necessary to attempt to overcome it, the physical distress caused by pyrexia requires of the physician the application of therapeutic measures for its judicious control. Aside from some specially indicated ones, the remedies constantly in use for the control of pyrexia are: Aconite, the bath, and the synthetic antipyretics, acetanilid, phenacetin, and antipyrin. In addition to their antipyretic action, these remedies have associated actions, upon which should depend their selection in the treatment of a given case. Thus, the prominent effects of the administration of aconite are depression of the heart's action, diminution of the blood pressure, and, to a moderate extent, cutaneous analgesia. The antipyretic effect of the drug slowly follows, and but rarely is it decided. It is probably due to the influence of the drug in controlling the heart's action and to increasing thermolysis or heat dissipation, by dilating the cutaneous capillaries and exciting perspiration.

The effect of the bath will vary in accordance to the temperature of the water and to the method of its application. With rare exceptions, the cold bath is not applicable to the treatment of diseases of children, and it is not often that a bath below 80° will be necessary or advisable. The characteristic action of the bath, aside from its antipyretic action, is as a powerful stimulant and tonic to the cardiac, respiratory, and vaso-motor centres. This action gives the bath its utility in the pyrexia of certain diseases, like typhoid fever, and should be the guide to its therapeutic use in any given case of pyrexia.

The mode of action of the coal-tar antipyretics, in reducing fever, is not yet positively determined. In all probability, their action is directly upon the thermogenic centre. They diminish heat production and increase, to some extent, heat dissipation. Their secondary action, upon which depends their great utility in the pyrexia of acute diseases, is as anodynes and analgesics. The dosage and method of administration are of great importance in the use of the antipyretics above mentioned.

Aconite is best given for the control of pyrexia, after the method of Ringer: To a child of three years of age, from one-sixth to one-quarter of a drop of the tincture should be given every fifteen minutes for the first hour, and every hour after that for ten or twelve doses; then the cardiac sedation may be maintained by the same dose every two, three or four hours.

Water may be applied by a variety of methods. The most generally useful, and in children the most readily applied, is the full tub bath. Only rarely do we find children who are disturbed by a tub bath in illness. The temperature of the water should be varied to suit the indications. For the treatment of pyrexia in general, a bath, beginning at a temperature of 95° and gradually reduced by adding cold water or ice until the temperature of the water is 85°, is the most generally useful. Children endure cold badly, and they should be carefully guarded against the fright that a sudden immersion in cold water is almost sure to bring. The duration of the bath should be from five to ten minutes. During the continuation of it, the cutaneous capillary circulation should be excited by vigorous rubbing. After the bath, the child should be dried and placed in dry sheets. The application of an ice bag or cold water to the head during the bath is advisable. Should the child fail to react promptly, or shiver from the effect of the application, a small dose of hot whiskey may be given to aid reaction.

The dosage of the coal-tar antipyretics and the method of administration are exceedingly important in order to get satisfactory and safe results. It is unnecessary for me to speak of the occasional unpleasant results that attend the use of these drugs, particularly acetanilid and antipyrin. In full doses, and markedly so in physical depression that results from a run of fever, they are powerful cardiac depressants. The cyanosis, which sometimes results from their use, is due to the change of the hæmoglobin to methæmoglobin. Although this is sometimes an alarming symptom, it is more of the nature of a signal of possible danger than of danger itself. The writer has used each of the three drugs, acetanilid, antipyrin and phenacetin, exclusively for many months in succession. Phenacetin has given by far the most satisfactory results. Clinicians generally agree that powerful effects, like cyanosis and dangerous cardiac depression, almost never occur with this drug in reasonable dosage.

Acetanilid has the doubtful advantage of cheapness, and antipyrin the advantage of ready solubility in water. Antipyrin acts the most promptly, acetanilid next, phenacetin is the slowest. Except in unusual cases, in which solubility is of importance and rapid action desired, phenacetin is the best of the three.

A mistake is frequently made in administering these drugs in too large doses too frequently repeated. It is rare, indeed, that it is necessary to reduce the temperature below 100°. All the reduction that is necessary or desirable may be accomplished by lowering the temperature two or three degrees, and this can be done safely with phenacetin in almost any disease. Such a reduction almost invariably relieves the pain and distressing symptoms of pyrexia. The beginning dose of phenacetin should never be larger than one-half grain to each year of age. This dose may be repeated every hour for two or three doses. Guided by the thermometer or the relief of the distress and the breaking out of a gentle perspiration, the administration of the drug can be arrested, when the result is accomplished.

Bearing in mind the secondary action of the antipyretic remedies detailed, the physician can select the one, or a combination of two or more, to suit any case of pyrexia. The action of aconite upon the heart and circulation indicates its use in the beginning of all the acute diseases attended by local engorgements. Acute nasal and pharyngeal catarrh, tonsillitis, laryngitis, bronchitis, pneumonia, and pleurisy in their first stages are particularly amenable to this drug ; but, as stated before, antipyresis and the relief of the unpleasant symptoms of fever in these conditions comes with aconite alone but slowly, or not at all. Continuing the use of aconite for this effect upon the circulation, much better results can be obtained in all of the conditions, by combining with the aconite one, two, or three proper doses of phenacetin at hourly intervals, at the height of the pyrexia. After the period of engorgement in pneumonia or any grave inflammatory disease, aconite should have no place in its therapeutics and antipyresis should be accomplished by the bath or phenacetin, administered with very great care. In croupous pneumonia of the child there is not the danger of heart failure that threatens the adult, and a few carefully gauged doses of a coal tar antipyretic in the afternoon or evening will safely relieve distressing pyrexia and pain. Whenever there is doubt as to the strength of the heart, the bath should, however, be selected.

In the pyrexia resulting from the absorption of ptomaines, and the acute indigestions of children, phenacetin is *par excellence* the remedy. It can be administered with calomel, bismuth, and salol to suit the necessity of the case. In the pyrexia of acute intestinal catarrh, entero-colitis, and cholera infantum, the coal tar antipyretics or aconite should not be used. In these conditions, attended as they are by vaso-motor paresis, they are most scientifically treated by the bath. In cholera infantum, this is the most powerful remedy we have to restore vaso-motor tone and reduce hyperpyrexia. In the profound nervous irritability with the high fever that so completely complicates acute intestinal disease, the bath is remarkable in its action. This condition, commonly spoken of as diarrhœal trouble going to the brain, is due, in all probability, to the direct action upon the central nervous system of toxic material, and to vasor-motor paresis.

In acute inflammation of the cerebral and spinal meninges, tubercular meningitis and leptomeningitis, and cerebro-spinal meningitis, phenacetin will be the antipyretic to administer. The cutaneous hyperæsthesia and the general irritability of these children preclude the disturbance attending the use of the bath, and, furthermore, the coal tar antipyretics are powerful nerve sedatives. In meningitis and cerebro-spinal meningitis, they promptly relieve the agonizing headache and neuralgic pains and induce quiet and refreshing sleep.

In the exanthematous fevers, aconite is sometimes of value to depress the excited circulation in the beginning, but it is a drug that should be administered in these diseases with extreme caution. In measles, the high fever attending the onset and acme of the eruptive stage, can be well and safely controlled by phenacetin. In the high temperature and nervous disturbance and the internal congestion that attends delayed appearance of the rash, the bath is by far the preferable measure. Its action upon the vaso-motor centres is to restore the equilibrium of the cutaneous and deep circulations.

In scarlatina, the cool bath should be one of the therapeutic measures in all cases. In cases of mild and moderately severe type with a temperature from 102° to 103°, the administration of one or two doses of phenacetin, when the pyrexia becomes uncomfortable, is good treatment. In severe cases, the temperature rising to 104° or above, the bath is the remedy, Occasional administration of one or two doses of phenacetin, to prolong its antipyretic action, may be of value. In grave cases with a suppressed rash, high temperature, and grave nervous phenomena, the bath vigorously used will relieve symptoms and save life.

In variola, the same principles apply as in the treatment of scarlet fever.

In malarial fevers, phenacetin will usually answer best the purpose of an antipyretic. In grave cases or in cases attended by a general depression of the nerve centres governing nutrition, the bath is best.

In typhoid fever, which usually runs a mild course in children, the same may be said. The early and systematic use of the tepid bath, however, is the treatment that gives the best results.

Antivivisectionists and the Serum Treatment.—We have been waiting for the antivivisectionists to put themselves in evidence in the matter of the horses who are being "poisoned" all over the world and subjected to what antivivisectionists call "diabolical tortures" in order to procure immunizing serum. The pictorial organ of the humors of antivivisection in this town is so far discreetly silent. But England has spoken in the person of Lord Coleridge. He has appeared at the head of a deputation protesting against the appropriation of money by the city for the purpose of manufacturing antitoxin. His argument is that it is a misuse of the tax-payers' money; but behind it all is the profound philosophic feeling that it is wicked to prick a few horses in order to reduce the mortality from diphtheria among human beings fifty per cent. —*Editorial in Med. Rec.*, 1895, xlvii., 48.

Dr. Hermann Freiherr von Widerhofer, Professor of Children's Diseases in the University of Vienna, has been created a life member of the Austrian House of Lords.

CLINICAL HISTORY OF A WALKER-GORDON BABY.

BY CHARLES G. KERLEY, M.D.

Assistant Attending Physician Babies' Hospital, Instructor in Diseases of Children, New York Polyclinic.

The baby, a vigorous, well formed male infant, was born in February, 1894, the weight one hour after birth being nine pounds four ounces. Nothing of importance occurred the first day or two of this infant's life. A greater part of the time was spent in sleeping, and in passive submission to the admiration of proud parents, interested friends, as is the custom of all well regulated new babies. On the third day nursing was commenced by the mother, a healthy young woman of about twenty-five years. Almost immediately following the first nursing there was an attack of colic. The nursing was continued at regular intervals, and was followed by colic at equally regular intervals. Diarrhœa of a moderately severe form soon developed; the stools were composed almost entirely of curds and mucus. There was no vomiting. The mother's milk was examined, and found to contain a normal amount of sugar and albuminoids, but was deficient in fat, showing approximately but one per cent., colostrum corpuscles were present but not in excess, in fact but few were found. All attempts to improve the mother's milk during a ten days trial having failed, and as the diarrhœa and colic continued, the nursing was stopped. Peptonized milk was the food selected to replace the breast milk. The milk was diluted—cream, milk and sugar added so that the proportions were: Fat 3; Alb. 1; Sugar 6. After a few feedings of this preparation, one ounce being given each time, the diarrhœa ceased but was followed by obstinate constipation and colic. The latter, bad enough while the patient was on the breast, now increased in severity.

The stools consisted of large masses which were expelled in balls upon the use of a Glycerine Enema. After five days of repeated remodifying this method of feeding was given up, and the Walker-Gordon Milk containing Fat 2; Alb. 1; Sugar 6; Lime Water $^1/_{20}$ was ordered. One and one-half ounces were given every two hours during the day until ten P.M. Only two feedings were allowed during the night.

The Walker-Gordon milk was continued for five days, and during this time, there was but little improvement. The colic and constipation were almost as bad as before. On the third day the albuminoids were reduced to one-half per cent., with some improvement in the colic, but the constipation was still troublesome. All the albuminoids taken were evidently passed undigested. After a five days' trial the modified milk was discontinued at the parents' request, who were anxious to use the malted milk.

The Horlick Malted Milk was accordingly adopted as the next article of diet. While taking this the colic ceased entirely but the diarrhœa reappeared, and continued as long as the malted milk was given. After two weeks experimenting with various strengths and combinations, the malted milk was in turn discarded. The diarrhœa, which we tried in vain to check, now subsided without the use of drugs. The baby was six weeks old and weighed five ounces less than at birth. He looked old, tired and pinched. At this point the Walker-Gordon milk was again resumed with reduced albuminoids and increased Fat. A Fat 3; Sugar 6; Alb. 0.5 was ordered, three ounces being given at each feeding. The colic again appeared and the diahrrœa gave way to constipation, but the colic was not as severe nor the constipation as troublesome as before. All the casein or albuminoids taken were apparently present undigested in the stools. The first gain, however, a gain of eight ounces, was made in one week. At the commencement of the second week the milk was peptonized, and this was given a week's trial but without relief; in fact there seemed to be more colic, the constipation was just as obstinate, and there was no gain in weight. There seemed to be an absolute inability on the part of the child to tolerate the smallest amount of albuminoids. We now gave him the modified milk as free from the albuminoids as possible. Fat 3; Sugar 6; Alb. 0.2; Lime Water $^1/_{20}$ was ordered, and fed to the child three ounces every two hours. At once the colic and constipation subsided, and a gain of seven ounces was made the first and nine ounces the second week. The boy was well and happy. There were two or three movements daily, the stools being normal with the exception that the 0.2 of one per cent. of albuminoids was present in small white particles. A 3.5 Fat; 6 Sugar; 0.2 Alb.; Lime Water $^1/_{16}$ was given for six weeks, and during this time, on this low percentage of albuminoids, four pounds one ounce were gained, an average weekly gain of nearly eleven ounces. The child was perfectly well, hard and strong. We now thought it safe to raise the albuminoids to one per cent., the fat, sugar and lime water remaining as before. Colic, constipation and undigested stools were the result, all of which subsided without the use of drugs, when the albuminoids were reduced to 0.2 of one per cent. For three weeks longer the 3.5 F., 6 Sugar, 0.2 Alb., Lime Water $^1/_{16}$ was continued, and thirty-one ounces gained. While on this low per cent. of albuminoids 0.2 of one per cent., nine weeks in all, an average gain of nine and two-thirds ounces was made weekly.

Our mistake made in the beginning was in trying to force the albuminoids, and in so doing acting according to our belief that they are an absolute requirement for the normal growth and development of the child. This was not the case with this baby. He was neither rachitic, flabby, nor pasty in appearance. The muscles were unusually firm, the skin clear. When seventeen weeks old, the albuminoids were increased to one per cent. and the fat to four per cent. The prescription called for Fat 4; Sugar 7; Alb. 1; Lime Water $^1/_6$. This was well taken and apparently digested without inconvenience, but the albuminoids could not be increased above one per cent. for three and a half months. At various times the amount was increased to one and a half per cent., and was always followed by an attack of indigestion, and we were obliged to return to the original one per cent. During the three and a half months while on the 4—6—1 combination seven pounds thirteen ounces were gained, or an average weekly gain of nine ounces. When seven and a half months old the 1.50 per cent. of albuminoids was taken without inconvenience. He has just completed the ninth month, and we have never been able to get the albuminoids above this point. An increase of one-fourth per cent. will produce restlessness, one-half per cent. colic and diarrhœa. At the completion of the ninth month the weight was twenty-six pounds twelve ounces. The patient could stand with no other assistance than the hands resting on a chair. He sleeps soundly from 8 P.M. to 6 A.M. without waking. The muscles are hard, the fontanelle is $^1/_2 \times {}^1/_2$. He has four perfect teeth, and two more nearly ready to appear. There is no rachitis. The first tooth was cut at the seventh month, and no disturbance has attended the cutting process. Fat 4; Sugar 7; Alb. 1.50; Barley Jelly $^1/_6$ to each feeding is the present diet, forty ounces being given in twenty-four hours. The barley jelly was added when the child was eight and a half months old. There has never been a loss in weight since the modified milk was brought into use the second time, which it will be remembered was at about the sixth week. From this time until the end of the ninth month, an average weekly gain of eight and a half ounces was made. For one week only there was no gain. The smallest amount gained in one week was three ounces, the largest amount fifteen ounces, and this large gain was made while the child was on the Fat 3.5; Sugar 6; Alb. 0.2 mixture. This is certainly a most satisfactory outcome of what was at first a very unpromising and troublesome case, and demonstrates what may be accomplished in the use of the Walker-Gordon milk when it is carefully adapted from day to day to meet the requirements and peculiarities of the patient.

In closing, it must be mentioned that the home care was excellent. The child was cared for almost entirely by a painstaking and devoted mother.

A Thousand Infants Overlain.—On December 27th, 1894, Mr. Braxton Hicks held five inquests on the bodies of children who had died while sleeping with their parents, the cause of death in the majority of cases being suffocation. The coroner said he could not persuade parents to get cots for their children, adding that a thousand infants were overlain in London alone every year. The matter is extremely serious. Perfectly healthy children are sacrificed to the bad habit of making them sleep with their parents. It is perhaps difficult to draw the line, and to separate thoughtlessness from carelessness so gross as to be criminal, but the Liverpool statistics, showing the enormous frequency of deaths from overlying on Saturday nights, points to the fact that the carelessness is gross, and that, unless drink is to be accepted as a general excuse for crime, the action is in a large proportion of cases criminal. The fight against preventable diseases is hard enough, but it seems harder still to prevent the effects of carelessness and folly.—*Brit. Med. Journ.*, 1895, i., 36.

To Blow or Wash ?—In these days of warfare against dirt why don't we wash our noses ? Surely they get quite as dirty as our teeth, which we brush so laboriously every day. The civilized nose is, in fact, one of the dirtiest organs of the body ; for, so long as civilization, which mostly means crowding, involves the breathing of dirty air, the nose, which is the organ by which the air receives its first preliminary purification, must become loaded with all sorts of nastiness. The man with a cold, who is always sneezing and slobbering with his handkerchief, is not a pleasant companion ; but, for all that, by dint of much "running," his nose at least is washed, and is cleaner within than that of the fine lady who has trained herself never to use the highly-decorated little bit of lace which she carries about and calls a handkerchief; for in that nose condense and accumulate the soot, the dust, and the microbes of our far from cleanly cities.—*Brit. Med. Journ.*, 1895, i., 43.

Clinical Memoranda.

TWO CASES OF ACUTE NEPHRITIS IN INFANTS.

BY GEORGE CARPENTER, M.D., LONDON.

Senior Physician to Out-Patients at the Evelina Hospital for Sick Children, London.

Victor May, *æt. five weeks*, and fairly nourished, was brought to Out-Patients on Nov. 7th, 1889, with a history of "wasting away" and a "red rash on the body." The eruption began when he was two weeks old.

On examination: Nothing abnormal was detected about the organs. The eyes showed a muco-purulent discharge, but the irides were free. He was "snuffling." The palms and soles were desquamating, as also the abdomen, the ears, and elsewhere slightly about the body. The mouth was sore all round, the lips being cracked and scabby.

On the left buttock were papules about the size of a hemp seed and saucer-like, not due to ulceration but to less affected cuticle made up of a small aggregate the size of a filbert, and in addition about half a dozen dotted elsewhere about. Shallow ulceration was noticed from the arms between the gluteal folds. There was a yellow scab at the root of the nose and two or three yellow crusts about the ears. He was considered to be syphilitic and treated with Hyd. c. sacchr. (Hyd. c. creta, gr. i.), gr. iv. t. i. d.

Nov. 14th. Back of left hand puffy. No improvement.

Nov. 21st. A deep ulcer with yellow unhealthy-looking base at the top of the natel fissure.

Nov. 28th. Both eyelids œdematous, white and waxey-looking. Marked œdema of the feet and legs and hands and forearms. It was stated that the eyes and legs had only been swollen one week.

A catheter was passed and about ʒ ii. of urine were withdrawn. With cold nitric acid there was a ring of albumin about one-eighth of an inch in depth. The urine was examined microscopically and numerous hyaline and epithelial casts found. There were a few blood casts, but no separate blood cells.

Post Mortem.—Dec. 1st. Still well-marked dropsy. A few ecchymoses in the visceral pleuræ. Small quantity of fluid. *Lungs.—R. lower lobe* solid. Pneumonic. *L. lower lobe* partly pneumonic, partly congested, partly fluid exuding from the latter.

Kidneys.—Both lobulated. If it had not been known that the child had suffered from symptoms of renal disease they would have been passed over as normal but there was in some places injection of interlobular vessels. Microscopically there were slight evidences of catarrhal nephritis. No history of scarlet fever was obtained in the case, and he was certainly syphilitic. Was the nephritis due to the syphilitic poison, or was it merely an intercurrent affection?

As far as the history and post-mortem appearances are concerned, there is nothing to prove or disprove either assumption, and apart from the fact that it was an instance of catarrhal nephritis occurring in a syphilitic infant, nothing definite can be said.

Harriet Wright, æt. eleven months, was brought to Out-Patients on July 8th, 1889, for dropsy of fourteen days' duration. No history of scarlet fever or diphtheria. Breast fed.

On examination: A dark complexioned child with remarkably pale face, which is big and chubby, but the lips are not markedly anæmic, and there does not appear to be any puffiness of the lids. The legs are very much enlarged, pale and rather shiny from the feet to the knees and pit on pressure. The thighs are big, but then the child is unusually fat. The hands and arms are not puffy. The child is markedly rachitic. No changes in the organs other than rachitic. Urine withdrawn by catheter. Pale, floculi abound, and a decided quantity of albumin on boiling. This was examined some hours after microscopically. No casts, but there were two doubtful red blood corpuscles.

July 29th. Albumin less. Legs much less swollen, and pit only a little on pressure. On July 15th there was a complaint of sickness on one occasion. On the 18th, of looseness of the bowels and restlessness, and the passage of only a few drops of urine at a time, and then micturition was so painful that she makes a "dreadful noise."

Aug. 8th. Legs swollen. Top of foot a little puffy.

Urine.—Opalescence on boiling, and a heavy deposit with picric acid. *Microscope.*—No casts. No blood. Some isolated round granular cells and clumps of similar cells. Bowels relaxed. Passage of water not painful and child lively.

Aug. 19th. Urine—slight deposit of albumin. Child looks pale.

Sept. 2nd. No albumin. No puffiness of face or legs and feet. *Heart* normal.

She remained under treatment for Rickets until Dec. 16th, and greatly improved in her general health. The urine was examined on several occasions, but no albumin was found.

The Dose of the Diphtheria Antitoxin.—Roux states that his practice has been to give 20 c.c. (over 5 drachms) of serum to each little patient on admission, and the same quantity, or half the same quantity, according to the severity of the case, twenty-four hours afterward; and if the pulse and temperature still remain high, the same dose is again given. He adds that the smallest quantity he has used has been over 5 drachms, and the largest quantity about 4 ounces; in one exceptional case he gave as much as between 6 or 7 ounces! Practitioners should remember these facts, and that Roux's series of cases is by far the largest and most important hitherto published. —*Med. Rec.*, 1895, xlvii., 51.

The Production of Antitoxin for Boston. — Five horses were inoculated with diphtheria toxin at Gallop's Island on January 25th, as a first step toward the production of antitoxin by the Boston Board of Health.— *Bost. M. & S. J.*, 1895, cxxxii., 117.

ACUTE DILATATION OF THE HEART FOLLOWING DIPHTHERIA—PULSATING LIVER—DIPHTHERITIC PARALYSIS.

BY GEORGE CARPENTER, M.D., LONDON.

Senior Physician to Out-Patients at the Evelina Hospital for Sick Children, London.

Ellen Bills, æt. $5^{11}/_{12}$ years, was admitted to the Evelina Hospital under my care on September 3, 1894, with the following history. Her illness commenced with enlarged glands in the neck, now all but disappeared. Recently she has lost flesh, complained of pain in the epigastrium and her abdomen is swollen. There was a strong family history of phthisis in the case of both parents. She had measles eight months ago and two years back "brain fever." *On admission* the pulse was 132 to the minute, the respirations 56 and the temperature 96.2° F. She was fairly nourished, suffered from dyspnœa, and her lips were rather blue. The *cardiac impulse* was found to be well outside the left nipple in the 5th interspace. There was no increase of cardiac dulness to the right as far as could be determined. There was a thrill probably systolic in point of time on placing the hand over the whole cardiac area. A bruit of a whistling character was detected over the impulse. This was not a marked feature at all, indeed, it had not been noticed in the out-patient department. It also was probably systolic in point of time. The lungs were resonant and there were a few râles to be heard. The abdominal walls were flaccid and the lower edge of the liver was easily palpated—it extended almost to the umbilicus.

The liver pulsated. The conjunctivæ were of natural color. The spleen was not enlarged. The urine showed a trace of albumin. She was ordered i. r. digitalis m. iii., ferri et ammon cit. gr. v., aq. ad ℥ ss. v.d.s. and milk.

Sept. 6th. The murmur cannot be detected to-day. The liver has receded almost to the costal margin. Her general condition has greatly improved. *Sept. 11th.* No bruit. Albumin $^{22}/_{120}$. Still blue round the mouth. A microscopical examination of the urine was made on the 12th.—there were not any casts. Cardiac impulse one-half an inch outside the nipple line and exaggerated. No epigastric impulse. Area of dulness does not extend to the right. A reduplicated first sound at the apex and the same at the left base. At a point midway between the nipple and the left sternal margin there is a very occasional rather scratchy systolic bruit taking the place of the reduplication. This is quite different to the systolic whistle heard on admission and is in no way like friction. The temperature has been subnormal and has only reached 98.4° F. on two occasions. Pulse 116. Respirations 28. The liver is now on a level with the costal margin in the nipple line. She sleeps well and takes her food satisfactorily. On October the 1st the Resident Medical Officer owing to pressure on the cots sent her to a convalescent home. Albumin had ceased to appear in her urine since September the 17th. Her pulse for the last four days of her stay in hospital varied between 76 and 100 beats to the minute and her respirations between 24 and 44. Prior to leaving hospital she was examined by the Resident. The question presented itself as to whether this was a primary renal case with heart failure or a primary heart case induced by some septic poison, scarlatinal or other, the nature of which was not determined, with secondary renal trouble. The absence of casts in the urine were rather in favor of the latter hypothesis. The duration of her stay in hospital had been twenty-eight days. The following day she was sent back from the convalescent home because milk found its way out of her nostrils. I saw her on her return and she had complete immobility of her soft palate and the patellar reflexes could not be obtained. I then requested the Registrar to make a more searching enquiry as to the illness from which she suffered prior to her admission into hospital, with the following result. The mother now admits that there was a "patch on the throat" and that the doctor gave her something to paint it with, with the result that the throat quickly recovered. To-day, October the 22d, the cardiac impulse is well internal to the nipple line—there is a diffused wave passing over the fifth, fourth and slightly in the third interspaces. There is no bruit and the sounds appear to be perfectly natural. The paralysis of the soft palate has disappeared, but the patellar reflexes are still absent. She can move her legs in bed.

The Spreading of Scarlet Fever.—The State Board of Health of Maine gives an excellent example, in its October publication, of some of the causes for the spreading of scarlet fever which under proper control could be avoided. "In Columbia in 1892, there were eight cases of scarlet fever, 'too mild to report to the local board,' so the doctor said. In 1893 there were twenty-seven cases of the same disease in the same town."—*Boston M. & S. Journ.*, 1894, cxxxi., 496.

Treatment of Burns.—Dr. A. Haas (*La Semaine Médicale*, No. 58, 1894) recommends highly the following salve in the management of burns:

Aristol	5–10.0
Olive oil	20.0
Vaseline Lanoline } *āā*	40.0

Lancet-Clinic, 1894, xxxiii., 502.

For Ill-nourished Children.

℞

Extract Malti,
Olei Morrhuæ,
Syrupi Ferri Phosphatis Compositi *āā* ʒ ss ad ʒ j.
Misce et fiat mistura.

To be given three times daily after food.—*Practitioner*, London, 1894, liii., 302.

RETRO-ŒSOPHAGEAL ABSCESS.

BY SAMUEL K. BREMNER, M.D.

Resident Physician New York Infant Asylum, Mt. Vernon, N. Y.

C. M., age three months, an inmate of the N. Y. Infant Asylum, is a thin, poorly nourished, bottle-fed child with snuffles since entrance. Mother denies specific history. Phthisis in father.

On 16th March, child had a temp. 103.6° F. with rhinitis but no cough. Takes bottle well and movements good. General examination negative.

17th. Purulent rhinitis, temp. 101.6° F. all day. No change otherwise.

Ensuing ten days, 18th to 28th, temperature never above 100, pulse good, respiration normal and considerable daily discharge from nose. Occasional slight cough, nursed well and bowels regular. Throat and chest examined several times with negative result. Child lost in weight and grew weaker.

28th–30th. Temperature was elevated 102.5°, cough frequent with slight dyspnœa. Signs of general bronchitis. Pulse rapid. Took nourishment well. General condition very poor. Throat was not examined.

31st. Temp. 103.8°. Same general symptoms and nursed well. Died at night.

Autopsy. Body, moderate emaciation. Brain anæmic.

On cutting through trachea to remove lungs pus exudes from incision. Examination shows an abscess pocket beneath œsophagus. The pocket contained about ℥ ii. thick, yellow pus, and extends from a point high up beneath post-pharyngeal wall, dissecting down behind œsophagus as far as fourth rib. Length is four and one half inches and average width one inch.

Lungs. Moderately congested; other organs normal.

It is interesting to note that there was no dysphagia;

child nursed well nearly to time of death. There was no swelling in post-phanynx and no external evidence of the condition found on autopsy.

Herpes Zoster in Children.—Dr. J. Madison Taylor recommends the following ointment:

℞	Acid. carbolici	gr. v
	Menthol	gr. v
	Ung. zinci ox	℥ ss
	Ung. hydrarg. ammon	℥ ss.

Mix and make stiff by adding dry zinc oxide. This is to be spread thickly upon a jacket of lint and applied to the herpes zoster.—*Polyclinic, Phila.*, *1894*, iii., 511.

Sterilization of Tubercular Milk.—If the results of the experiments of Dr. Legay, reported to the Congress convened to discuss tuberculosis, be confirmed, then the boiling of infected milk is not a sufficient protection against infection from this source. Dr. Legay placed dessicated and powdered tubercular sputum in milk which was boiled and subsequently injected into rabbits. At the points of inoculation abscesses formed in which were found tubercle bacilli.—*Bklyn. Med. Journ.*, 1895, ix., 44.

An Improvized Incubator.—Marion Sims's first speculum was the handle of a kitchen spoon, and Sir William Fergusson is said to have amputated at the shoulder with a pocket knife. We do not, however, remember to have come across a more notable instance of inventive genius rising superior to mechanical difficulties than the following, related by Professor Landouzy, of Paris, in the *Gazette des Hôpitaux*. A pupil of his, M. Queyrat, had occasion to make some bacteriological cultures in the country, far from the simplest apparatus of the laboratory. He was not to be beaten, however. He captured a hen, tied her up, and fixed a tube containing serum sown with micro-organisms under her wing. At the end of twelve hours some fine colonies had made their appearance.—*Brit. Med. Journ.*, 1894, ii., 1,465.

INCONTINENCE OF FECES AND DIARRHŒA FROM STRICTURE OF THE RECTUM WITHOUT ULCERATION.

BY JAMES P. TUTTLE, M.D.

Adjunct Professor of Surgery and Diseases of the Rectum, New York Polyclinic.

The notes of the following interesting case are taken from the records of the Clinic for Diseases of the Rectum and Anus at the New York Polyclinic.

"March 20th, 1894. M. D. G. æt., five years, residence Jersey City. Was born with imperforate anus. Was operated upon on the third day. Operation was repeated twice within a short time. Mother dead, but her grandmother says she had frequent perirectal abscesses up to the third year and one since then. There are no evidences of these abscesses having been operated upon. The child's abdomen is intensely distended, hard and more or less tympanitic. There is a stricture beginning at the level of the external sphincter and extending upwards about three-fourths of an inch with calibre of No. 12/F. urethral sound. Child seemed to have no control over feces, and of late had had as many as thirty-five stools in a day. The stools were soft and thin but not watery. She was weak, anaemic and could not walk well.

Operation by posterior proctotomy was performed under chloroform on March 22d, '94. Thorough incision back to the coccyx was made at one stroke. With the incision came a gush of blood and fecal matter. The hemorrhage was alarming, and with the fecal matter pouring out through the wound, it was impossible to pack it or catch the vessels. By passing the two index fingers into the rectum and grasping the two edges of the wound between the finger and its respective thumb upon the outside the hemorrhage was checked. The fecal flow continued until over two quarts had passed, and the abdomen had become soft and much reduced in size. When this had ceased the edges of the wound were released and cleansed. There was only a slight oozing from them, showing that the hemorrhage had come from engorged veins due to the intra-abdominal pressure. There was an anterior rectocele or pocket caused by thin bands of mucous membrane stretched from side to side; this was removed by taking this band away with scissors. The child remained in hospital three days and continued to pass comparatively large amounts of feces until her abdomen became of normal size.

The anus was dilated twice a week with No. 8 Wales bougies until parts had healed over, and small doses of opium given for a time to control peristaltic action of bowels. Her general health began to improve at once and control over feces soon began to return.

"Oct. 25, '94. Child hale and hearty. Walks well and plays from morning 'till night. Examination of rectum shows good sphincteric power but no stricture. She has had from one to three movements a day for past three months, and can control her bowels as well as other children.

The points of interest in the case are:

1st. The imperfect, if not improper operation for imperforate anus. Had this operation been properly done, or had that which was done been followed up by sufficient dilatation the patient's condition would not have occurred.

2d. The abdominal distension, the incontinence and diarrhœa due to the anal obstruction.

3d. The venous hemorrhage and method of controlling it.

4th. The improvement in general health following restored intestinal functions.

Centenary of Vaccination.—The German Institute for Vaccination is preparing to celebrate, in 1896, the centenary of Jenner's discovery. It is proposed to have at the same time an exposition of all articles concerning vaccination—old and new instruments and methods of preserving vaccine, original manuscripts on variola and vaccinia, medals, portraits and autographs of celebrated inoculators, vaccinators and anti-vaccinators.—*Journ. Am. M. Asso.*, 1895, xxiv., 33.

The Old Foundling Hospital of Rome has been permanently closed, chiefly on account of the high mortality of the foundlings.

EMPYEMA: BRONCHIECTATIC CAVITY.

BY S. HENRY DESSAU, M.D.

New York.

The following cases are instructive, in presenting for diagnosis rare points both in their history and physical signs, which when compared form a striking contrast.

John S., six years of age, was seen in consultation by me in June, 1893, while ill for one week with a pleuro-pneumonia. He was not seen by me again until three months later, when there was given a clear history of an empyema with spontaneous rupture into a bronchus. He was then pale and was wasting, had a severe cough with at times profuse expectoration of fetid purulent sputa, at other times muco-purulent. The profuse expectoration of purulent sputa had begun suddenly, at the height of his illness one month before. When seen on the second occasion he had scoliosis and elevation of the right shoulder. His fingers were clubbed at the tips, respirations 40, pulse 124, temp. 101° F. The right chest was contracted, being one inch smaller than the left, and there was very little movement of the ribs of that side on respiration. Vocal fremitus was absent over the lower two-thirds of the right side. The apex beat of the heart was to the outer side of the left nipple. Percussion note was flat on the right side posteriorly up to the spine of scapula, anteriorly to the first intercostal space. Under the clavicle there was a cracked-pot note. Harsh and bronchial respiration on auscultation posteriorly, to inferior angle of scapula, less below than above. Anteriorly respiration purely bronchial under the clavicle. Broncophony anteriorly, and posteriorly to lower angle of scapula—slightly ægophonic at this point.

Permission to make an exploratory puncture with an aspirating needle was refused, likewise all thoughts of surgical interference was stoutly objected to. His condition remained about the same for four months, when he began to show signs of decided improvement. The treatment had been the internal administration of eucalyptol and emulsion of cod-liver oil, together with nutritious diet. By the following spring, notwithstanding an intercurrent attack of influenza, his cough was gone and his general condition was excellent. Physical examination showed signs of a remaining thickened pleura. He had gained in strength, weight and color, could run up and down stairs without fatigue, had good appetite, slept well and played in the street.

The second case was a boy, Chas. H., four and one-half years of age, seen at my clinic at the Mount Sinai Hospital Dispensary. He had a severe attack of pertussis when one and a half years old, which lasted eight months. During that time and about the height of the attack, he had dropsy of his legs, feet and face for four or five days, also an attack of stomatitis and fever. He was confined to his bed for three or four weeks. Soon after the dropsy was noticed he began to cough up putrid purulent sputa, which soon became profuse in quantity, also more fluid in character. Now he coughs up large quantities of putrid muco-purulent sputa, sometimes mixed with streaks of bright blood, after a severe spell resembling an attack of pertussis, but without any whoop. Also has attacks of vomiting, when the discharge comes through the nose as well as mouth. These attacks occur without coughing, and the vomited matter contains no food. One of these coughing spells occurred in my presence. He is lively, pale, fairly well nourished, good appetite, tips of fingers clubbed. Pulse, 96; respiration, 16–20; temp., N.; sleeps well.

The left side of chest on inspection is larger than the right. It measures one-quarter inch more than the right. The apex beat of heart is not displaced. Vocal fremitus normal over both lungs.

At the extreme base of left lung percussion note is flat, higher up to the spine of scapula it is dull. On auscultation, pleuritic rubbing, with cavernous respiration is heard, together with bubbling râles one inch below the inferior angle of scapula. Half an inch to the left of this point in the subaxillary space there are finer râles with bubbling, and amphoric respiration. In front, friction râles are heard up to the apex.

An exploratory aspiration was attempted, but owing to various causes unfortunately failed. The patient did not present himself again. There is good reason to believe that this was a case of bronchiectatic cavity. If judged alone it might easily be taken for a chronic empyema with bronchial fistula, but when compared with the first case it will be noticed that the onset as well as the continuation of the discharge was different. Also there was enlargement instead of contraction of the affected side and the position of the heart was unaltered.

It is to be regretted that the exploratory aspiration was unsuccessful, as this might have determined definitely the diagnosis.

The Fat of Women's Milk.—Laves finds (*Zeit. f. physiol. Chem.*, xix.) that the fat of women's milk is very poor in volatile acids and those soluble in water, but contains a large amount of acids belonging to the unsaturated series. The volatile portion is composed largely of caproic, caprylic, and caprinic acids; the non-volatile, insoluble portion, of palmitic, stearic, and oleic acids, besides which are one or more acids of a lower molecular weight, including, perhaps, myristinic acid. The melting point of the fatty acids is 37° to 39° C.; the melting point of the fat itself, 30° to 31 C. The chemical composition is thus quite different from that of cow's milk.—*Med. Journ., N. Y.*, 1895, lxi., 188.

Ice Creams and Bacteria.—Dr. Klein has been examining bacteriologically the ice creams sold in the public streets, and the water used for washing the glasses in which they were served. In all, six samples were examined, and in each sample such an abundance of pathogenic and other germs were found, that it led Dr. Klein to assert that they were not inferior to ordinary sewage. Many of the forms identified bore striking resemblance to those diagnostic of typhoid—if, indeed, they were not identical. In view of these facts the importance of careful legislative control over food provision cannot be overestimated.—*Med. Rec.*, 1895, xlvii., 168.

THE ABUSE OF ASTRINGENTS IN DIARRHŒAL DISEASES OF CHILDREN.

BY H. C. SHUTTEE, M.D.

West Plains, Mo.

In his work on "Diseases of Children," Smith says, "that the vegetable astringents are now seldom used in the treatment of diarrhœal diseases of children ; that even the mineral astringents, acetate of lead and nitrate of silver, have gone out of use, and that bismuth and the alkalies have taken their place in the treatment of these diseases.

If this statement were true,—if the vegetable and mineral astringents had gone out of use in this class of cases, this paper would not have been written ; but if one can judge from current medical literature and conversation with fellow-practitioners, such is not the case.

If we consider for a moment the causation of infantile diarrhœas, on the one hand, and physiological action of the vegetable and mineral astringents on the other, we cannot come to any other conclusion than that in the vast majority of cases they do harm instead of good when administered in these affections.

First, then, in the light of modern investigation, what is the cause of diarrhœas in children ? I think that we are justified in stating that all diarrhœal disturbances of any gravity, whether caused by improper food, exposure to cold, bad air or water, or other agencies, are due directly to certain pathogenic microbes, either introduced from without or resident in the alimentary canal. The biology of bacteria is still in its infancy, but that some non-pathogenic bacteria may, under certain circumstances not well understood, become pathogenic, is believed by some who have investigated this subject both in its bacteriological and clinical aspects. Indigestible food and other agencies may cause considerable intestinal flux from simple irritation of the intestinal mucous membrane, but no serious or inflammatory diarrhœa can occur except through the agency of germs.

If it be true that the cause of these diarrhœas is microbal in its nature, it is plain that so far as these organisms are concerned, astringents can neither destroy them nor neutralize the products of their activity,—products the absorption of which produce the general symptoms.

In the stomach the vegetable astringents combine with albuminoids and pepsin, rendering the latter inert; they are only partly carried off by the intestines in the form of gallic and pyrogallic acids, so that they could not act by precipitating and rendering insoluble ptomaines or toxalbumins as might tannic acid if brought into contact with them. When the pathological condition is located in the large intestine or rectum tannin injections would be of service because of their local action.

Given by the stomach the vegetable astringents must be used in large doses to be effective in controlling a diarrhœal discharge, and when so given would be very likely to irritate an already irritable stomach, precipitate pepsin, diminish secretion, and do much harm. If they succeed in checking the intestinal flux, this result is not desirable until the cause is, as far as may be, removed, when it will cease without their use. It is only in cases with profuse watery discharge threatening speedy collapse from too great loss of fluid, that their use would be justifiable, and even in these cases opium usually relieves the condition much more speedily and effectively.

The objections to the use of vegetable astringents do not apply with equal force to the mineral astringents, but they too, if given in considerable quantity, precipitate pepsin, irritate the stomach, and can readily be dispensed with, except perhaps in certain chronic ulcerative conditions of the intestinal mucous membrane.

If astringents are not to be used in the treatment of diarrhœal diseases of children the question may be asked, What is the proper treatment?

This question will be answered in brief outline only.

1. *Eliminative and Corrective.*—If undigested or decomposed food, vitiated secretion or bacterial products are in the alimentary canal, as is usual when the case is first seen, a purgative, preferably calomel and soda, should be given, even if the diarrhœa is profuse. Besides clearing the alimentary canal, calomel arouses the secretions and acts as an antiseptic ; the contents of the intestines are usually highly acid, hence the utility of the alkalies. There would be as much sense in putting an antiseptic dressing on a wound covered with stinking pus without first cleansing it, as to check a foul, bad-smelling diarrhœa without first cleansing out and disinfecting the alimentary canal.

2. *Sedative.*—To soothe the irritated mucous membrane and nervous system opium may be given if necessary, and its effects carefully watched. Opium also checks excessive discharge if given in full doses. Irrigation of the large intestine when the disease is located here is both eliminative and sedative, and can also be made antiseptic. Of course, remedies to relieve nausea and vomiting are to be employed.

3. *Antiseptics.*—Any medicine not destructive to the organism, which will destroy germs or neutralize their products answers this purpose. They should be given conjointly with the other remedies and form the basis of the treatment around which cluster other measures as indicated by the condition of the case. Nothing can take their place and their early and continued use is indicated in all cases. Salol and sodium salicylate are my favorites.

4. *Supportive.*—No food should be given during the stage of excessive gastric irritability or until the digestive powers are equal to the task of properly disposing of it. A pre-digested food may be necessary for a time ; afterwards the food should be such as is easily digested. Stimulants are to be used as needed.

If these general principles, briefly and inadequately set forth, are faithfully and intelligently carried out, we will seldom if ever need either the vegetable or mineral astringents in the treatment of infantile diarrhœas.

A CASE OF PYO-PNEUMO-THORAX IN A CHILD TWO AND A HALF YEARS OLD.

BY A. BROTHERS, M.D.,

New York.

The following case occurred in the practice of Dr. H. Beck of this city, who was kind enough to permit me to examine the child and make suggestions regarding its management. As this is the only case of its kind which I have met in a child, after a fairly large experience in treating diseases of children covering a period of more than ten years, I believe it deserves to be placed on record.

Three months prior to Dr. Beck's first visit (July 2d) the child was in the height of a severe attack of whooping cough, with daily nose-bleeds during the paroxysms. During the latter part of May the child became acutely sick with cough, difficult breathing, and fever. The child continued severely sick up to the time of the doctor's visit when the diagnosis of acute lobar pneumonia involving most of the right lung was made from very distinct dulness and bronchial breathing over this region. Within a few days the breathing assumed an amphoric character and tinkling râles could be heard.

On July 9th I was requested to examine the child. At the time of my visit the temperature (rectal) was 99°F. The pulse was very rapid and could not be counted. The respiration was 50 per minute and of a moaning character. The general appearance indicated a very sick child. The stomach was in fair condition, but the bowels were very costive—not having moved in four days. Physical examination revealed tympanitic percussion-note over the entire right side of the chest anteriorly and posteriorly. Liver dulness could only be discovered an inch below the free border of the ribs. Over the left lung the percussion-note was quite resonant, probably compensatory. The area of heart dulness was distinct but diminished in extent. On inspection the right side of the chest presented a bulging aspect. No succussion sound could be elicited. Over the right lung, excepting the upper third, the breathing was amphoric in character all the way down. No tinkling râles could be heard at the time of my examination. Over the apex of the right lung crepitant and subcrepitant râles were numerous. Several days previously they were present over the entire lung.

From the history and physical examination the diagnosis of air and probably liquid in the right pleural cavity was readily made. In view of the child's great distress I suggested immediate aspiration. Placing the child in a horizontal posture the needle of the Dieulafoy aspirator was introduced into the pleural cavity and, after drawing off about sixteen ounces of air, pus--nearly a half ounce—appeared in the barrel of the syringe. This established the diagnosis of pyo-pneumo-thorax, probably the result of the rupture of a small pulmonary abscess. After the operation the child was distinctly relieved and the pulse, previously imperceptible, could now be felt at the wrist. The amphoric respiration disappeared and the child rested more easily for a number of hours.

Later in the evening the amphoric quality of the breathing began to return and subcutaneous emphysema developed at the point of insertion of the needle.

The following evening (July 10th) I found the temperature 101½°, respirations 72, and the pulse again imperceptible. The case was evidently doing badly. Tympanitic percussion-note and amphoric breathing over the entire right side of the chest indicated a re-filling of the pleural cavity with air. Subcutaneous emphysema involved an area of two by four inches at the point of insertion of the needle. As the case was not to be trifled with I suggested operation by free incision with drainage. With the assistance of Dr. M. Cisin and under my supervision Dr. Beck made a free crucial incision through the emphysematous region and then opened into the pleural cavity, introducing a fair-sized drainage-tube. As the child coughed, the hand placed over the outer extremity of the tube could distinctly feel the expulsion of the air. After a while about a half ounce of purulent liquid was brought out through the tube. The wound was now dressed. It is needless to state that thorough antiseptic precautions were taken during the operation. After the completion of the operation—which was done very rapidly and skilfully—the child was very much collapsed. Stimulants were freely administered during the night and next day the child was doing nicely.

From this time on the prognosis looked very favorable. The child breathed comfortaby, took its nourishment well, and we were quite hopeful as to the future. Unfortunately an acute gastro-enteritis developed, the temperature began to range between 101° and 103°, and although all pulmonary symptoms disappeared and the wound healed nicely, the child finally succumbed about three weeks after the operation.

In view of the favorable state of affairs which directly followed the operation we think we are justified in commending this as the only proper course to pursue in a similar case. Although aspiration was given a trial we found in less than twenty-four hours the pleural cavity again filled with air and a subcutaneous emphysema superadded. We think that just as aspiration is being banished from the treatment of empyema so it deserves no standing in pneumo-thorax unless as a temporary resort. The fact is that air in the chest—like pus—requires removal and drainage, especially as the mere aspiration of such air does not seal the aperture in the pulmonary tissue whence the air escapes.

DEATH FOLLOWING RE-INSERTION OF INTUBATION TUBE.*

BY T. C. EVANS, M.D.

Lecturer on Diseases of the Eye, Ear, Nose and Throat, in the Kentucky School of Medicine, etc.
Louisville, Ky.

On January 7th I was called to a suburban town to do an intubation in the case of a child æt. four years, a diagnosis having been made by the attending physician of membranous croup. No membrane was visible in the pharynx, there was marked dyspnœa, asphyxia, &c. The tube was introduced without anything unusual occurring. A culture was made of a portion of the mucus taken from the pharynx, which revealed no diphtheritic germ at this examination. The child went along without an unfavorable symptom other than those naturally belonging to a case of intubation, with pulse, temperature and respiration normal, until the seventh day, at which time I again visited the patient to remove the tube. Upon removal of the tube the child coughed a little, and seemed to be rather croupy. I thought this might be due to a slight irritation from the presence of the tube, and did not regard it necessary to introduce the tube at once. I came home. I had hardly reached my office when a telephone message came that the child was not doing well. I immediately returned, and within two hours after I removed the tube, I was again at the patient's home. On my second visit I found that the child was already unconscious, having become asphyxiated in this short time ; still, I did not feel particularly anxious, as I thought it would be very easy to re-introduce the intubation tube, and that the child would come out all right, as the asphyxiation was so recent. In attempting to re-introduce the tube the dyspnœa became much worse, insertion of the tube gave no relief and the child died in the nurse's arms two or three minutes after I succeeded in re-introducing the tube. Artificial respiration was practiced with negative result, and all attempts at resuscitation proved unavailing.

I think the conditions existing at the time I removed the tube were such that a false membrane was left adhering to the walls of the larynx and vocal chords, and that on my attempt to re-introduce the tube the membrane having become partially loosened from the larynx and trachea, in pushing the tube a caste of the larynx was carried in front of the tube effectually blocking up the trachea. It is the only fatal case I have ever had, where it became necessary to introduce the intubation tube the second time. A second culture made from a small piece of membrane removed with the tube showed the presence of the Klebs-Loeffler bacillus.

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*Read before Louisville Clinical Society, Jan. 15th, 1895.

DISCUSSION.

Dr. S. G. Dabney: I have seen one or two deaths from asphyxiation, where I regretted that I did not have a tracheotomy set with me. Dr. Evans spoke to me concerning this case in private conversation, and I suggested that we ought always to be prepared and be provided with instruments necessary to do a tracheotomy should it seem necessary in such cases. It is true in the case under discussion death ensued so speedily, that the probabilities are a tracheotomy would not have saved the life of the patient. Although it is a custom that I have not always practiced, my opinion is when we do an intubation and at every subsequent visit, certainly where we remove and re-insert the tube, we ought to be prepared to perform a tracheotomy if the emergency arises. The lesson to be learned from such a case as Dr. Evans has reported is very plain, and one for us all to benefit by though as stated probably nothing could have changed the result in this instance.

Dr. I. N. Bloom: I want first to compliment the speaker on the fact that he is willing to report a case which terminated fatally. One would think few surgical cases terminated badly in this city to judge by the few unsuccessful ones reported. In addition to that I wish to ask,—had he been provided with proper instruments would he have performed a tracheotomy at once under the circumstances? I presume this operation could have been performed in thirty seconds; would there have been any probability of saving the patient's life by such a procedure?

Dr. T. C. Evans: As to the question of tracheotomy: Of course it is advisable as Dr. Dabney has said, and it is suggested in most text books, that we always be provided with a tracheotomy set when removing or re-inserting an intubation tube. Still in this case I do not believe a tracheotomy could have been done, as the child was so nearly exhausted when I reached the house. I firmly believe a tracheotomy at the time of my second visit could have done no possible good. In a child four years old there is a great deal of adipose tissue about the neck; the neck is very short and thick as a rule; and I think it would hardly be possible to do a tracheotomy in thirty seconds, and in this case I doubt if it could have been done inside of five or ten minutes. I have never performed a tracheotomy, but this operation in the child is much more difficult than in the adult, because the trachea is very small, deeply situated in the neck and very soft. I can readily see in the adult how a tracheotomy might be done by an expert operator very quickly by making pressure over the upper part of the trachea and cutting down upon it; but in the child the rings of the trachea are so soft that nothing can be gained by pressure; the trachea cannot be outlined in the child as readily as in the adult by pressure, so that tracheotomy becomes much more difficult.

The International Congress for the Treatment and Protection of Infancy will be held next year in Florence, and the organizing committee there are already receiving intimations from the physicians and surgeons of other nationalities signifying their intention to take part in the proceedings. Austria will be strongly represented, and communications are announced from her delegates on Children's Hospitals, Deaf-mutes, Blind and Idiot Children, Hospitals and Asylums for the Scrofulous and Rachitic, Correctional Establishments, Foundling Hospitals, Kindergarten, and Orphanages. The Vienna committee from which these contributions emanate includes the well-known names of Professor Wiederhofer, Count Falkenhayn, Baron Spinger, Geheimrath Dr. Kusy, Councillor Theimer, Dr. Gnädinger, and Professor Monti.—*Med. Rec.*, 1895, xlvii., 184.

EDITOR OF THE ARCHIVES.—Dr. Dillon Brown has resigned his position as Editor of the ARCHIVES OF PEDIATRICS. His resignation will go into effect after the distribution of the April number.

STRANGULATED OBLIQUE INGUINAL HERNIA OF THE RIGHT SIDE IN A CHILD TWO AND ONE-HALF YEARS OF AGE, WITH THE BLADDER IMPRISONED IN THE HERNIAL SAC AND INGUINAL CANAL.

BY JOHN A. WYETH, M.D.

Professor of Surgery in the N. Y. Polyclinic and Visiting Surgeon to Mt. Sinai Hospital.

J. I. Male ; two and one-half years old. This patient has just come under observation with a large, painful swelling in the right inguinal region, and with a history of having had a hernia from birth. The mother states that the child had passed no urine for twenty-four hours. A diagnosis of strangulated inguinal hernia was made, and the child is now being chloroformed for operation. It is always wise to move immediately upon these cases, and this child has already been too long with a strangulation which should have been attended to within six hours after the onset of the attack. The child, which is now wholly under the influence of the anæsthetic, is held up by the feet, so that the intestines, by traction from within, may possibly reduce the hernia. As no impression is made upon the mass, we shall cut down upon it. The incision discloses a very unusual condition. There are here, as you observe, two distinct sacs ; the one upon the outer side proves it to be an unusual form of hernia, known as the encysted hernia of Astley Cooper, from the fact that it was first described by that great surgeon. This form occurs where the peritoneum adheres to the structures of the cord at the internal ring, but is loose and patulous beyond that. As the hernia descends, it pushes the peritoneum before it, this membrane being still attached to the cord at the internal ring, but beyond this the vaginal process is so stretched and pushed in front of the hernia that it forms a double sac. This is occupied by a mass of omentum which is easily reduced, and being in good condition, is allowed to go back into the peritoneal cavity without being tied off. I will now pass my finger into the abdominal cavity through the neck of the sac, and find a second sac-like process well in the inguinal canal on the inner side of the first or encysted hernia. In structure, this sac is very much like the bladder; and as the bladder has a high position in children, and is occasionally dragged into the inguinal canal, we will now pass a small sound through the urethra in order to demonstrate whether it is the bladder or not. Although this sound readily enters the bladder, I cannot feel the end as high up as the internal ring. I deem it safer to open the sac and find out exactly what it is, and treat it as the condition may demand. By making an opening large enough to admit the little finger it passes readily in and without doubt is in the bladder. Further down, as the finger descends, the point of the sound can now be felt. Without allowing the bladder to fall back into the peritoneal cavity, I shall introduce half a dozen Lambert's sutures and close it at once. This is done without further trouble, and the bladder then dropped back into the peritoneal cavity.

Note.—As the child was in a very weak condition at this time, the radical operation for the cure of the hernia was not deemed expedient. The wound was filled with an iodoform gauze compress and left to heal by granulation. For the first five days after the operation a small catheter was kept in the bladder, being introduced through the urethra. This precaution was taken in order to prevent the bladder being filled with urine and leakage at the point of suture. The patient recovered without any accident.

The Morphine Habit in Children.—Dr. J. B. Mattison, Brooklyn, N. Y., is desirous of adding to the clinical literature of morphinism in children, and would be glad to receive the full details of such cases.

Infection of the Umbilical Ring has been treated most successfully by dropping into the folds of the umbilicus, solution of hydrogen dioxid. Usually one application has been sufficient, although a second may be used if the symptoms do not subside. No other antiseptic has proved itself so useful in quickly checking septic inflammation in this region.—*Davis in Phila. Polyclinic*, 1895, iv., 60.

THE TREATMENT OF EMPYEMATA IN CHILDREN, BASED ON AN ANALYSIS OF 86 CASES.

BY EDMUND CAUTLEY, M.D.

Physician to the Belgrave Hospital for Children, London.

The eighty-six patients were treated in St. Bartholomew's Hospital or the Belgrave Hospital during a period of ten years. In eighty-four of these the effusion was on one side only.

The cases may be divided into four groups as follows :

	TREATMENT.	NO. OF CASES.	RECOV'R'D.	DIED.	MORT'L'Y.
I.	Nil.	4	3	1	25 %
II.	Aspiration	12	12	0	0
III.	Incision.	35	28	7	20 %
IV.	Resection.	33	27	6	18.2

Average age four and one-half years. Four were exactly a year old; none under that age. Fifty-seven under six years; twenty-seven between six and twelve. Thirty-eight were between two and five.

Sex.—Forty-four males, forty-two females.

Side.—Forty-one on the right, forty-three on the left. Nine pointed before admission.

Total Mortality.—Fourteen out of eighty-four or 16.6 per cent.

GROUP I. No surgical treatment adopted. One died of pyæmia, the effusion being quite a secondary condition. In one the effusion was absorbed. In the others it discharged through the lungs.

GROUP II. In all forty cases were treated by aspiration; of these twelve recovered and twenty-eight required further treatment, of the twelve, in which aspiration was the only surgical treatment adopted, none died. The average duration after the last aspiration was six weeks. In some the fluid re-collected and was afterwards absorbed.

GROUP III. Eighteen were aspirated before further treatment by simple incision and drainage. Four were irrigated. Seven pointed before operation. One was discharged with a sinus for which thoraco-plasty was subsequently performed with perfect success.

Four were under two, and only one died.

Eight were under three, and only two died.

Some died from (i), general bronchitis (ii), exhaustion (iii.), general tuberculosis (iv.), erysipelas (v.), syncope during irrigation (vi.), purulent cerebro-spinal meningitis (vii.), pericarditis and nephritis.

In three of the cases a counter-opening was made at the time of the first operation. In three at a varying period subsequent to it.

GROUP IV. Ten were aspirated before resection and drainage was adopted. Six were irrigated. One pointed before operation. Four were discharged with a sinus remaining.

Five were under two, and of these four died.

Seven were under three, and of these five died.

Six died from (i.), double pleurisy (ii.), exhaustion (iii.), œdema of the lungs and partial consolidation (iv.), pericarditis (v.), bronchitis (vi.), peritonitis and pyæmia.

Case (vi.) was one of a loculated empyema which opened into a bronchus and was imperfectly drained.

Conclusions and Remarks.

1. An empyema may be re-absorbed, especially if the pneumococcus is the originating cause.

It is, however, bad treatment to leave the case to nature on account of the risk of rupture internally through the lung or externally through the chest wall.

Whenever pus is diagnosed in the pleural cavity it should be evacuated.

2. the objects of treatment are (i.), to remove the pus (ii.), to prevent re-accumulation (iii.), to procure complete re-expansion of the lung (iv.), to leave behind no deformity.

3. Aspiration is at best a temporary and unreliable mode of treatment. A thick fluid blocks the cannula. Even in the most formidable cases some fluid is sure to be left behind and will act as a source of irritation. If carried out too rapidly there is danger of rupture of the lung and consequent pyo-pneumothorax or of oedema of both lungs. It is, however, useful in cases of urgency; in cases of sero-purulent effusions and as a temporary expedient in double effusions. Cases recover completely under this mode of treatment, but the risks are out of

proportion to the advantages gained. If used, syphon aspiration is better than the use of the bottle.

4. Simple incision and drainage is better than resection of a rib or part of a rib. It is very exceptional in children not to be able to drain efficiently through an intercostal space. Recovery does not appear to be more rapid under treatment by resection and the shock is more severe. Certainly in the present series of cases the mortality from resection in children under three is enormous as compared with the mortality among those treated by simple incision.

5. When the medullar cavity of a rib is laid open there is greater danger of pyæmia.

6. The risk of hæmorrhage is very small under either mode of treatment.

7. It is unnecessary to explore the cavity and break down adhesions. In some cases it may be distinctly injurious.

8. The chances of a radical cure are certainly no better under treatment by resection. In the present series four were sent out with a sinus as compared with one of those treated by simple incision.

9. There is greater liability to imperfect expansion of the lung and contraction of the side in cases treated by aspiration or resection or left to nature, than if incision and drainage be adopted.

10. Resection should be reserved for the rare cases in which the ribs are closely approximated, or as a secondary means to ensure closure of the sinus. It may be used as an accessory measure if drainage is found insufficient, subsequent to the simple operation.

11. The tube should not be more than two inches long; it is not necessary to insert a long tube as the mode of cure is not by granulation from the bottom but by expansion of the lung, ascent of the diaphragm and contraction of the side. It should be removed as soon as the discharge becomes scanty and serous, sometimes even as early as the third day, otherwise it acts as a source of irritation, keeping up the discharge, prolonging the illness and militating against a successful cure.

For Eczema of the Face.—Carefully remove all the crusts. Avoid water. Keep the following ointment constantly applied to the lesions by means of a soft linen mask.

℞	Ung. Picis	ʒ i
	Ung. Diach...............	ʒ ij
	Ung. Zinci ox....	ʒ ij

Mix. Sig. For external use.

RESECTION OF THE HIP JOINT*.

BY FRANK WARNER, M.D.

Surgeon to Children's Hospital, and Lecturer on Operative Surgery, Starling Medical College, Columbus, Ohio.

On November 12th, 1892, I reported a case of resection of the hip joint, performed on the 21st of the preceding October. The specimen of bone presented then is represented now, and I improve the opportunity to present in addition the patient together with a history of her progress to the present time.

In my previous report of the case, published in *Merck's Bulletin* January, 1893, I said, "on opening the capsule, the head of the bone was found denuded of its cartilage, and the *acetabulum somewhat roughened*." This latter condition had much to do with the subsequent behavior of the wound. The upper part of the shaft of the femur was carious. An exsection was made and the wound substantially healed, leaving a slight fistulous opening, through which there exuded a slimy discharge. The high temperature (104°), which had been of daily occurrence ceased. After a few weeks, however, a slight elevation (100–101°F.) occasionally occurred. In the course of three months I lost track of the case until about a year ago, when she presented herself at the Children's Hospital. I found then that there was a continual discharge of sero-purulent fluid and considerable elevation of temperature. As the part removed was of a tubercular character, and, as I mentioned, we found a roughened acetabulum, the inference was natural that this portion of bone was likewise infected. An incision was made and much of the acetabulum and surrounding bone chiseled away. The fistulous tract was curetted, and the entire wound healed in a short time without unpleasant symptoms.

An appliance was devised to aid the child in locomotion. By the valued assistance of Dr. Hatton, who was then Interne, the child was soon about.

Before the introduction of antiseptic surgery resection of this joint was looked upon as a formidable operation, a heavy percentage of the cases dying from septic disturbance. The death rate has of late years been so much reduced as to render the old mortality statistics worthless and to rob the operation of all terror.

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*Read before Central Ohio Medical Society, at Columbus, on February 7th, 1895.

There has always been a distinction between the danger of this operation for disease or for gun-shot injury. Dr. Otis, U. S. A., gave the death rate of hip joint exsection as 90 per cent for gun-shot injuries. These were the statistics compiled from the war records of the Rebellion. As antiseptic surgery had not come upon the field, this statement is of no value to us.

The chief reason for which an exsection will be undertaken in this situation, in civil life, is for the removal of diseased bone—bone diseased as a rule by tuberculous infection.

An important matter that at once forces itself to our attention is "When should an exsection of this joint be undertaken?" also "What degree of usefulness will a limb possess subsequently!" "Will a resection interfere with the subsequent growth of the femur?"

Clearly an exsection should only be undertaken for a diseased joint when patient treatment has demonstrated, or the extensive involvement of the joint shows that the question is reduced to amputation, exsection or probable death from the prolonged suppuration and high temperature that nearly always accompanies these destructive joint diseases. I have seen a few hip joints infected with tubercular caries that recovered by simple incision into the joint and the injection of a 10 per cent. solution of iodoform in glycerine, but if the involved bone be at all extensive, an excision will finally be demanded. But the mere fact of an early incision through the periosteum, the instituting of direct drainage, and the daily flushing of the diseased joint with an antiseptic solution, say of corrosive chloride 1-2000 will often, I believe, avoid the necessity of the radical operation.

In a carious hip joint, the pus which reaches the surface by numerous fistulous and more or less tortuous tracts, does not have a free exit and these necrotic particles afford a favorable bed for the development of pyogenic organisms and septic fever develops. It is such cases which need a more direct and free drainage or an excision will quickly be demanded.

On consulting the various authorities, I find that useful limbs will result in about two-thirds of the cases which recover.

" The objection which is often urged against excision in children," says the *Encyclopedia of Surgery*, p. 560, vol. iii., "that it interferes with the future growth of the limb, is more apparent than real. Boeckel, of Strasbourg, from an investigation of more than twenty cases of arrested development, came to the conclusion that the shortening was less due to the injury of the epiphyseal cartilages than to disease of the limb, owing to pain or to muscular atrophy, and, as shown by Mr. Barwell, * * * the arrest of epiphyseal growth is by no means unlikely to occur as a result of inflammation, even in cases treated without operation."

The case I present is now well. There are no fistulous tracts anywhere. The limb is a useful one. The limb grows equally with the other, and while there is some shortening it is easily compensated for by a thick sole to the shoe. The patient, who is now ten years of age, has a very useful limb.

A New Hospital for Contagious Diseases.—Mrs. Minturn has given $25,000 for a new hospital for contagious diseases. It is to be under the control of the New York Board of Health, and is intended for patients who can afford to pay.

Gastro-Enteritis in Infants.—From examinations of the blood of infants suffering from gastro-enteritis, conducted in Professor Epstein's clinic at Prague, and recorded in the *Lancet*, A. Czerny and P. Moser think that this affection is to be regarded as a general infection of intestinal origin. It is, therefore, different from dyspepsia, in which the disease remains limited to the gastro-intestinal tract. Thus, out of fifteen cases of gastro-enteritis in which the blood was examined during life, in twelve the presence of micro-organisms was ascertained. On the other hand, in only two out of thirty healthy children were cultures obtained from the blood, and of eleven infants suffering from dyspepsia only one yielded that result. The microbes found circulating in the blood in the subjects of gastro-enteritis comprised staphylococci, bacterium coli commune, bacillus pyocyaneus, and bacterium lactis aerogenes, all of which are known to occur in the intestinal contents. It is pointed out that this variety in organisms concords with the multifariousness of the symptoms of gastro-enteritis, whilst it shows that prophylactic measures are more hopeful than therapeutical, the value of which latter must depend on the kind and intensity of the general infection.—*Maryland Med. J.*, 1895, xxxii., 363.

Society Proceedings.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

Stated Meeting, February 14, 1895.

Transposition of Viscera.—Dr. Henry Dwight Chapin presented a young man in whom the heart and spleen were on the right side. The young man had come to him complaining of slight pain in the right side, and under the supposition that he had a localized pleurisy, a physical examination was made, and this transposition of the viscera discovered.

Dr. Abraham Jacobi carefully examined the man, and confirmed the diagnosis.

The Effect of the Primary Schools on the Health of the Children.—Dr. Henry D. Chapin, in a paper with the above title, spoke of the bad sanitary condition of some of the primary schools, and referred to the reports that he had made in 1890 and 1891 for further details. In most of these schools, the children were crowded together in the lower rooms of the grammar school buildings without sufficient light and air. The prescribed allowance of air in the three lower grades was 70 cubic feet, and in the three higher grades, 80 cubic feet, while in the grammar schools it ranged from 90 to 100 cubic feet. The Board of Health, however, required that each person in a tenement house should have from 400 to 600 cubic feet. Again, many of the class rooms in the primary schools were without proper furniture, and as a result the little ones were compelled to sit in awkward and unhealthy attitudes. Another matter of very great importance was the absence of proper provision for hanging and disinfecting the outer garments of the school children. The great curse of our present system was the division of responsibility among three bodies, viz.: the Board of Trustees, the Board of Education, and the Board of Estimate and Apportionment. With a proper fixing of the responsibility, many of the evils spoken of would speedily disappear. The Board of Education was deserving of censure for the attention given to the higher schools at the expense of the primary schools, particularly in the poorer districts. He hoped that a mandatory law would be enacted which would give the Board of Health authority to compel observance on the part of the schools of proper sanitary regulations.

How Can the Sanitary Conditions of the Public Schools be Improved?—Charles C. Wehrum, Esq., ex-Commissioner of Schools, discussed this question. He said that his remarks were based on an experience of three years among schools, during which time he had visited all the public schools in this city and state. Deficient light and ventilation seemed to him to constitute the greatest menace to the health of the children attending these schools. In some of the schools, it was necessary to employ artificial light, and where this was gas, the air became rapidly vitiated by the combustion of the gas, thus adding another evil. In some of these schools electric lighting had been tried, but while it had been found that there had been a marked improvement in the general health of the scholars, the system had proved too expensive.

The speaker then referred to certain schools which had fallen especially under his observation by reason of their very bad sanitary condition. In one grammar school, for example, he found 2,066 children in attendance, and the rooms lighted by gas, and dreadfully over-heated. Although this school had been in use for forty years, he found eighteen class rooms without desks. In another school, he counted 85 children crowded on to 64 seats. At the time of his tour of inspection there were 240 class rooms without desks; to-day, there were only fifteen class rooms still unprovided with desks. The three great factors that had led to this deplorable state of affairs were inaction, circumlocution and parsimony. At the present time, without taking into consideration the rapidly increasing needs of the schools, he felt confident that seven million dollars would be required to put the schools in this city in proper condition.

The Influence of the Schools in Disseminating Infection.—Dr. Moreau Morris took up this subject. He said that parents and guardians with few exceptions were willing to carry out the suggestions of the family physicians regarding the best way of preventing the spread of the infectious diseases. In the schools personal contact was unavoidable, and the susceptibility of children in general made it difficult to prevent the spread of such diseases. There were many ways of carrying contagion which would escape the notice of the casual observer. Thus, the school-books were usually covered with muslin or cloth, often from houses in which there had been infectious diseases. The indiscriminate use of slates and of lead pencils was another means of spreading disease, and the common practice of washing the slates with saliva was exceedingly liable to cause the dissemination of diphtheria. In the higher grades of the schools it was now the custom to furnish the scholars with paper pads and lead pencils, but unless each scholar had his own pencil, the same danger still existed. Books should never be covered with any textile fabric, but instead with stiff glazed paper. The outer garments of the children should be placed in suitable closets outside of the class rooms, and should be disinfected while there. The children should be compelled to come to school with clean faces and clothes. A mild attack of scarlet fever or measles was popularly supposed to be non-contagious, and for this reason many children so affected were allowed to return to school while capable of spreading the disease. The teachers deserved much credit for their watchfulness and promptness in detecting children just developing infectious diseases. Any child found to be suffering from a sore throat should be sent home immediately, and not allowed to return to the school until entirely well. All the children attending the public schools were required to present vaccination certificates, or to be vaccinated if this had not been done for seven years, but such vaccinations could not be performed by the Board of Health physicians without the consent of the parents or guardians of the children.

Dr. Lee, Assistant Superintendent of Schools, said that he thought it would require three times seven million dollars to put the schools of the city in an ideal condition. It ordinarily required three years to acquire property and prepare plans for schools. Out of the 145 school buildings under the care of the Department, probably not more than one-tenth were in anything like the bad condition described by Mr. Wehrum. He had found that the average time that elapsed from the sending by a physician to the Board of Health of a notice of a case of contagious disease, and the receipt by the principal of the school of such notice, was one week, and hence he thought it would be better for the physicians to notify the school principals directly. At the present time, it would be found that there was a change of occupation in all the primary schools every half hour, with calisthenic exercises freely interspersed. In our efforts to improve the sanitary condition of the public schools, we should not forget that there were many private schools equally deserving of the attention of the medical profession.

The Peculiar People.—There are many ways to heaven and many forms of penance have been invented by which to mortify the flesh on earth, but few more curious than that of the Peculiar People who, apparently for their own salvation, sacrifice their children, exposing them to suffering and death rather than call in medical assistance in their illness. At an inquest lately held at Chelmsford on a child belonging to one of these people the coroner rightly enough said to the parent: "When you are ill yourself you can do as you like, but when you have children you are responsible for medical attendance upon them." The absolute fatuity of these people is well shown by the remark made by the coroner to the effect that at Canning Town, where there are a considerable number of "Peculiars," there is a woman who is always called in to patients, from which it would appear that their sanctimonious assertion that they "trust in the Lord" is not entirely true and that they are not unwilling to ask advice and treatment so long as the treatment is that of a person sufficiently ignorant. It is the light of knowledge that they shun.—*Brit. Med. Journ., 1894, ii., 1287.*

Divided Doses of Antitoxin.—Dr. H. H. Freund recommends in the treatment of laryngeal diphtheria divided doses of Behring's antitoxin No. 1. He used 3 to 4 c.c. at each dose and reports three successful cases. —*Med. News, Phila.*, 1895, lxvi., 240.

Wind Colic of Infants.—Dr. G. C. M. Godfrey in the *Medical Record* suggests the following:

℞. Extract zingiberis fluidi, c.c. 6 (ʒ iss)
Tincturæ asafœtidæ, c.c. 12 (ʒ iij)
Aquæ menthæ piperitæ,
Aquæ cinnamomi, aa c.c.30 (℥ j)
Syrupi simplicis, q. s. ad. c.c 120 (℥ iv)
M.

SIG.—ʒ j (c.c.4) t. i. d. in water before meals.

Of course, the practitioner will change the quantities and ingredients to suit each case; it is very hard for an infant to take.—*Col. and Clin. Rec.*, 1895, xvi., 43.

Current Literature.

I.—MEDICINE.

Williams, Francis H. (Boston). A Few Cases of Diphtheria Treated With Antitoxin. (*Bost. M. and S. Journ.*, 1894., cxxxi., 607.)

He has had an experience of about twenty cases of diphtheria treated with antitoxin. He reports in detail the history of six of these cases, of which one, a desperately sick child two years old died twelve hours after the beginning of the treatment, and five days and a half after the onset of the disease.

In treating diphtheria, he now, as a rule, injects antitoxin and applys a spray of a twenty-five volume acid solution of hydrogen di-oxide locally in the throat, and a two-volume solution locally in the nose once in three or four hours, and uses no additional treatment. Good food, absolute rest, protection from draught or from a temperature that might give the patient a cold, are to be insisted upon. In some cases a little stimulation may be desirable.

Hedges, B. Van D.:—The Rational Treatment of Diphtheria. (*Med. Rec.*, N. Y., 1894, xlvi., 682.)

He offers the following suggestions:

Local Treatment. 1. Thorough disinfection with peroxide solution, rendered neutral with bicarbonate of soda. 2. Administration of freshly prepared pineapple juice, either alone or with the tincture of the chloride of iron, if a condition of anæmia be present. 3. Application of papoid,either by insufflation of powder or painting with strong solution.

Constitutional Treatment. 1. Alcohol given in heroic doses. 2. Hypodermatic injections of strychnine pushed until there is exaggeration of the deep reflexes. 3. Concentrated nutritious diet.

Snell, S. H.: Concurrent Varicella and Scarlet Fever, (*Lancet, London*, 1894, ii., 1152.)

A patient four years of age was shown to him in a house where he was attending two cases of scarlet fever (the patient's sisters). The child was very feverish, and over the face and body there was a typical varicella rash. On the following day a profuse scarlatinal rash also appeared, so that the two rashes were concurrent. Each rash ran the usual course peculiar to itself, and the patient after the second day was so little affected that she was with difficulty kept in bed. The child subsequently desquamated. About ten days later the two children who had had scarlet fever exhibited well-marked varicella rashes. This is therefore a case where abundant proof is available that the two rashes were beyond doubt those of scarlet fever and varicella respectively, and that the two diseases occurred in this child at the same time.

Openshaw: Compression of Skull. (*Brit. Med. Journ.*, 1894, ii., 1310.)

He showed before the Hunterian Society an infant, aged four weeks, with a compressed skull. Above the zygomas, supraorbital ridges, and crossing the center of the occipital bone the skull presented a well-marked constriction, as if a thick rope had been tied round it. The labor, though not instrumental, had been prolonged. The pelvis of the mother was said to be contracted. The upper part of the occipital bone projected over the parietals, but did not seem to be osseously ankylosed in this position. The two parietals seemed firmly ankylosed together. No change had taken place in the skull since birth. The frontal region was flat and receding. The child had cried almost continuously since birth, and, though taking the breast well, was evidently suffering from defective mental development.

Dr. Tatham considered the case was one of primary brain defect with secondary skull change, and did not consider operative interference was likely to produce any benefit.

McShane, J. T.: Chlorate of Potash Poisoning, with Report of a Case. (*Journ. Am. M. Assoc.*, 1894, xxiii., 860.)

At six o'clock, P.M., July 31, 1894, he was called to see Marie O'Neal, aged eleven years, suffering from thirst, nausea, vomiting, pain in the stomach, loins and head. Temperature in the axilla 102 degrees; extremities and face cold; pulse at the wrists imperceptible; heart's action rapid and feeble, and a marked cyanotic condition of the whole surface of the body. The patient had been out with her mother calling on friends until four o'clock when, on account of feeling ill, she returned home. At eight o'clock P.M., on August 1, the temperature was 102.5 degrees F., pulse 130 and fairly strong, frequent vomiting and insatiable thirst. No evacuation of the bowels or bladder. Cyanosis still present, hands and feet cold, ends of fingers and toes shrunken. The color of the patient was striking, presenting a bluish-ashen hue, very like that of an anemic person whose skin has been discolored with nitrate of silver. At this time the patient was extremely restless and semi-conscious. Her temperature varied from 101 to 103.5 degrees F., until the morning of the fourth day of the attack, when it was normal, and so continued. Stupor was a constant symptom after the first few hours of her sickness, only varying in degree on different days. She could be aroused sufficiently to answer questions intelligently and recognize her friends any time during her illness, with the exception of the third day.

The history of the case shows that on July 30 the patient had sore throat, for which chlorate of potash had been used, but on inquiry the mother stated tnat it had been used only as a gargle. On the morning of the third day of her illness, two ounces of fluid of an inky blackness was drawn by a catheter from the bladder. This aroused suspicion that more of the chlorate of potash had been taken than the mother was aware of. Investigation revealed the fact that eight or ten tablets had been taken on July 30, and a teaspoonful of the solution on the forenoon of the 31st, making not less than two hundred grains in all. On account of inactivity of the kidneys the bowels were kept freely opened by the administration of Rochelle salts. Towels wrung from hot water were applied to her back over the kidneys. Cardiac stimulants and diuretics were administered. The average amount of urine secreted per day did not exceed a half ounce. The urine, which at first was dark, gradually cleared up. Examination of the blood was negative; the corpuscles were not crenated or otherwise deformed; the number was not counted.

On Sunday morning, August 5, which was the sixth day of illness, the blueness had disappeared and given place to a white, waxy appearance. The whites of her eyes were slightly jaundiced. Light pressure over the hepatic region caused severe pain. Two drachms of urine, containing a large per cent. of albumen, was secured by catheterization. Her condition continued without noticeable change until 2.30 P.M., when she grew worse, and died in a few minutes.

Kuh, Edward J.: A Case of Primary (?) Laryngeal Diphtheria, Treated with Behring's Antitoxin. (*Journn. Am. Med. Assoc.*, 1894, xxiii., 828.)

The patient was a girl, aged seven years, and not only was membrane coughed up but a bacteriological examination showed the presence of Loeffler bacilli. The hoarseness began on November 6th, and six days later she was intubated and received the first injection of 10 c.c. of Behring's antitoxin No. 2. She died the next night of broncho-pneumonia.

Hechter—Tuberculosis in Infancy and Childhood. (*Ref. in Archives Kinderheilkunde.* B. xviii. H. 1, ii.)

From the first of April, 1888, to February 20th, 1892, autopsies were made upon seven hundred children in the Munich Pathological Institute, 13.9 per cent. were found tubercular. Diphtheria and croup were the causes of death in 38.4 per cent.. The greatest number of deaths from tuberculosis occurred between the second and fourth year. After the fifth year it approaches, as regards frequency, the diseases in the adult. The greatest death rate was in the winter and spring. The lymphatic glands were found diseased in 92 per cent. The lungs in 76.2 per cent. The meninges in 26.8 per cent. The liver in 24.7 per cent. The intestines in 22.7 per cent. The spleen in 20.6 per cent. Kidneys in 15.6 per cent. The pleura and bony system, in each 10.3 per cent. Brain in 7.2 per cent. Peritoneum in 6.2 per cent. Dura in 4.1 per cent. Pericardium in 2.1 per cent. The male genitals in 2.1 per cent. The great omentum, the tonsils and the stomach were involved in 1 per cent. of the cases. Of the lymphatic infection, the bronchial glands were most frequently diseased. Fifty cases of latent tuberculosis are reported, in which some intercurrent disease was the cause of the death. Among these—in 72 per cent. the bronchial glands were affected, the lungs in 40 per cent., the mesentary glands in 10 per cent., the cervical glands in 8 per cent., the liver, bones and joints in each 6 per cent., the pleura, peritoneum and larynx each in 2 per cent. There were among the seven hundred but seven children under nine months of age.

Ferrier: The use of Methylblue in the Treatment of Malaria in Children. (*Ref. Archives Jahrbuch Kinderheilkunde.* B. xviii., H. 1, ii.)

The author has used the Methylblue in the treatment of malaria in forty children with satisfactory results. The remedy was found useful in some cases in which quinine had failed. Unpleasant effects were never observed. Neither the stomach, bladder nor kidneys were disturbed in any way. From 0.5 to 9.5 grammes were given daily. The amount given depended more upon the severity of the disease than upon the age of the patient. The author gave a six-months-old nursling, who had had malaria for a long time, 0.35 to. 04 grammes daily without injury. In order to prevent a relapse the drug should be continued several days after signs of the disease had disappeared. A convenient vehicle for its administration is syr. orange or cinnamon. Under its use the general condition improves rapidly. The skin clears, and diarrhœa and headache subside, the tongue clears up and the liver and spleen gradually return to their normal size.

Ord, Wallis : Subdural Hemorrhage in Scurvy. (*Brit. Med. Journ.*, 1894, ii., 1,430.)

He showed before the Pathological Society of London an extensive subdural hæmorrhage from a case of infantile scurvy. The clot occupied the whole of the vault of the cranium, but there was no sign of hæmorrhage at the base. The patient had been fed on a proprietary food from birth, and showed marked rickety deformity of the head with beading of the ribs but no affection of the long bones. There had been no sign of intracranial pressure during life, and the child had died of an attack of acute broncho-pneumonia. There was no history of syphilis, tubercle, or hæmophilia. Feeding on fresh food and medicinal treatment had not effected much improvement in the case, which showed an extreme degree of anæmia, hæmoglobin only amounting to ten per cent. of normal. The author drew particular attention to the question of feeding, the involvement of the cranial bones, with freedom of the long bones, the absence of pressure signs, and the evidence of the non-epidemic character of the disease, a twin brother brought up in the same way being quite free from scurvy.

Vincent, Thomas Norris : Tænia—Their Treatment. (*Va. Med. Month*, 1895, xxi,, 967.)

He reports the following case, showing the value of pelletierine tannate.

Mary ——, when about twenty-one months old, was found to be passing fragments of the body of a tape-worm, about three to five feet at a time. She was placed upon the usual preparatory treatment and then given fluid extract of male fern ʒ j, properly prepared, and failed to pass the worm, though a purgative was given her. The case was then left alone for some time, but her health began to suffer, and she wasted to a skeleton; and finally, passing fragments from time to time, she was given ol. resin of male fern, and with a result as above noted, bringing away the body, but no head. Last November he administered again male fern ol. resin, and again the body came away, about ten feet, but no head. Finally, October 23, the case was given pelletierine, the tannate. After the usual preparation and milk diet, at 6 A.M. on the 23d of October she was given one-fourth of the usual dose, ℥ iij, of this preparation, and at 7.20 A.M. she passed the worm head and nine feet of body. She was only slightly inclined to vertigo once after the dose, and no bowel trouble followed.

Handford: Idiopathic Muscular Atrophy. (*Brit. Med. Journ.*, 1894, ii., 1,431.)

He showed before the Nottingham Med.-Chir. Society a boy, aged eleven, suffering from Idiopathic Muscular Atrophy. No other member of the family was affected. At the age of five years the boy had typhoid fever, and for two months after convalescence was established was unable to walk, and had to be carried about. The upper extremities gradually became affected. At the age of nine he suffered from scarlet fever. Since then the muscular wasting had made more rapid progress, and for a year he had been unable to stand or to rise in bed.

Donkin, H. B.: Malignant Jaundice in a Child Two Years of Age. (*Lancet, London,* 1895, i, 28.)

A girl two years of age was admitted into the East London Hospital for Children on Nov. 22nd, 1894, with well-marked jaundice of skin and conjunctivæ. She was said to have been always weakly and to have had pneumonia a year previously, but no other definite illness. Her illness began three weeks before admission with a "cold." Jaundice was noticed two weeks before admission; the motions were white and the urine was of deep color, staining linen. She vomited four days before admission and was restless at night, throwing herself about.

On admission jaundice was found to be well marked, and the child appeared to be very ill and rather restless. The lips were of good color. There was no cough and the temperature was normal. Nothing abnormal was revealed by physical examination of the heart and lungs. The liver was felt one finger's breadth below the costal margin, somewhat hard and smooth. The upper limit of dulness was perhaps a little lowered. About ten o'clock on the morning of the 23d she became very restless, and soon after grew apparently unconscious of her surroundings. Delirium set in, soon developing a maniacal character, the child throwing herself about in bed and biting her clothes and hands or anything she could reach with her mouth. The pupils were equal and rather contracted, but reacted to light. The pulse was 120, irregular; the temperature was still normal. The urine and fæces were passed unconsciously. The jaundice had increased in intensity. The child was very thirsty. Petechiæ now appeared on the front of the legs. The child cried very little, but moaned when disturbed; the tongue was covered with a dirty white fur. The patient remained maniacal all day, but during the evening became quieter and drowsy; the pupils were dilated and sluggish at 10 P.M.; the temperature was 100° F.; the pulse was 140 regular. During the night coma gradually set in, the petechiæ became more numerous, and the jaundice more intense About 5 A.M, on the 24th the child vomited a quanity of blood and died shortly afterwards.

Although a post-mortem examination could not be obtained in this case, and there was no opportunity of examining the urine for leucin and tyrosin, the diagnosis of malignant jaundice or "acute yellow atrophy" seems amply justified. The case was in all respects clinically similar to two others see in children aged two years and a half and six years respectively, where post-mortem examination proved complete destruction of the cellular liver structure. In none of these cases was there evidence during life of any considerable diminution of the liver, and in at least one of those examined after death the liver was not below the average in weight. A practical lesson to be learnt from such cases is to be very guarded in the prognosis of all so-called and apparent cases of "simple" or "congestive" or "catarrhal" jaundice in children when the jaundice does not abate within a week, and still more when it increases.

Ferguson, R. J. Incubation Period of Chicken-Pox. (*Brit. Med. Journ.*, 1895, i., 73.)

J. N. and W. N. are two brothers, aged respectively seven and five years, and attending the same board school. J. N., the older, is rather delicate and was confined to the house with bronchitis from about November 10th. The younger continued to attend school, and on the night of November 26th became feverish, restless and wakeful. Next morning, November 27th, he was found to have a copious varicellar erruption over his body, and was kept at home till December 10th. The two were allowed to live and sleep together as usual, and the older was examined from time to time for evidence of infection. On morning of December 10th I examined him and found no eruption. During the afternoon, however, he fevered, was put to bed, and at night neck, shoulders, and back and front of chest were found covered over with chicken-pox papules.

Though this is only one case, it is free from any complicating condition as regards source of infection. It goes to prove that "the incubation period is fourteen days, and that it is infectious directly the rash appears."

McCollom, J. H. The Importance of Bacteriological Investigations in Cases of Diphtheria. (*Bos,. Med. and Surg. J.*, 1895, cxxxii., 49.)

From the opinion of the authors quoted and from the results of the 500 cases of suspected diphtheria investigated at the Bacteriological Laboratory of Harvard Medical School, it is evident, that, to accomplish anything in diminishing the frequency of this disease, it is o paramount importance—

First, That in suspected cases of sore throat, or in cases where there is a profuse nasal discharge, a bacteriological investigation should be made.

Second, That in any case of diphtheria the patient should not be removed from isolation until there have been two negative cultures from the throat and from the nose.

Third, That the pseudo-diphtheria bacillus, so called, is not insufficiently frequent to cause any great error in diagnosis.

Love, I. N. (St. Louis), Typhoid Fever in Infants. (*Journ. Am. Med. Assoc.*, 1895, xxiv., 1.)

This paper may be condensed into the following conclusions :

1. Typhoid fever occurs more frequently in children than is generally supposed.

2. The fact that ulceration and hemorrhage is much less frequent would explain the absence of pronounced abdominal symptoms.

3. The erratic, undeveloped and hyper-sensitive nerve centers in early child life explain why the toxic secretions of the Eberth bacillus should make cerebral symptoms very pronounced.

4. Given a child of any age with or without intestinal disturbance, with a continued elevated temperature, with or without marked evidence of cerebral disturbance, the possibility of the presence of the Eberth bacillus of typhoid fever should be constantly kept in mind.

Duffield, George: Prophylaxis of Diphtheria. (*Am. Lancet*, 1895, xix., 5.)

He emphasizes the following points:

1. Bacteriological diagnosis.
2. Quarantine of quarters.
3. Isolation absolute, with one nurse.
4. Better disinfection, to be under the charge of the health officer.
5. The notifying of the pastors of churches and superintendents of Sunday schools, of the disease and its locality.
6. The establishment of the overflowing drinking-cup in all the schools.

Thompson, W. Gilman: A Case of Tetanus with Demonstration of the Bacilli; Treated with Inoculations. (*Med. Rec., N. Y.*, 1895, xlvii., 5.)

The patient was a school-boy, thirteen years of age, and he was infected three weeks before admission to the hospital by stepping on a spike which penetrated his shoe and made a wound in the ball of the right foot. The course of the disease, the onset of which was five days before admission, fully established the diagnosis of tetanus, and this was further confirmed by finding the specific bacillus from scrapings made about the hole in the boy's boot, at the point where the iron fence-spike had penetrated.

On the thirteenth day of the disease the inoculations with a tetanus toxin were begun, and he received from one-half to one c.c. daily for five days. Whether the inoculations benefited him or not, they certainly did no harm, and he made a very satisfactory recovery.

Doktor: The Care of the Navel. (*Archiv fur Gynäkologie,* Bd. xlv., H. 3. *Pract. London,* 1895, liv., 85.)

He reports his experience relative to the treatment of the umbilicus in newborn infants and the prevention of infections. In newborn infants the navel forms a columnar projection of the skin, on the top of which the cord is attached—a sharp line of demarcation, the navel ring, separating the cord from the skin. On its margin are numerous vessels that go to the border of Wharton's jelly, but do not enter into it. When the cord is ligated its tissues lose their viability, and must separate and fall away, leaving the wound covered with a living structure. We must regard the navel as a physiological wound of the abdomen of the newborn, its healing differing in no way from that of any other wound, the only peculiarity of the process being the topography of the wound. In typical cases it heals by first intention. This small wound is specially liable to infection and resultant maladies, light or severe:—(1) Because of its condition; it is not merely a wound of the abdominal skin, but also of its wall and in closest proximity to the abdominal membrane (peritoneum), which is very susceptible to infection. (2) The peculiarity that three great vessels lie free in this wound. (3) The third great factor tending to infection is the disproportionately large mass of dead tissue—the remains of the cord. (4) Again, this wound is peculiarly inclined to an excessive formation of granulations. (5) The frequency of development of anomalies and aberrations of the umbilicus also predisposes it to disease. According to Erös, 68 per cent. of umbilical wounds do not heal in a normal manner; and of these cases 45 per cent. suffer from fever. How often these cases terminate fatally is not known. In treating the navel the aim is to obtain healing without infection. The ordinary method is to simply ligate the cord some eight to ten centimetres from the body and wrap it in an oiled rag, after careful disinfection with sublimate solution, 1 : 1,000, and then binding it to the abdomen with a bandage. At each bathing of the child the cord is washed, and if there be not much secretion a new bandage is applied, or a cotton wad is placed over the navel first. Too often cleanliness in the latter matter is neglected by the nurse. The author omitted the oiling of the rag in the above method, as it hindered mummification. The temperature was taken twice daily. Iodoform was applied to the wound, or, if needed, a weak carbolized wash. With the above treatment, 35 per cent. of cases had fever, and of these 16 per cent. showed infection. The plan was then changed. The cord was removed as early as possible and all wetting omitted. The bandage was changed daily. After this, 25.8 per cent. showed a rise of temperature, and of these 10 per cent. had infection. Further improvement resulted when efforts were made to hasten mummification of the cord. Ligatures applied closely to the belly were next tried, the stump being one centimetre long. This gave 11.88 per cent. of fever and 3.46 per cent. of infection. As a general rule, fever occurring during the healing of the navel is due to infection, notwithstanding the failure of local symptoms, and especially the coincident frequent digestive disturbances cause no fever. The author summarises the treatment of the umbilicus as follows:—(1) Cut the cord as close as possible. (2) The bandage once applied should not be changed except for good cause, and preferably the bath should be omitted.

Foster, R. A.: Cases of Diphtheria Treated With and Without the Antitoxin. (*Med. News, Phila.*, 1895, lxvi., 121.)

From tabulated statements it appears:

1. That of 2,740 cases of diphtheria—selected and unselected (and which included those that required tracheotomy and intubation)—treated with the antitoxin, only 509 died, or a mortality of 18.54 per eent.

2. That of 4,445 cases, which also included those that required tracheotomy and intubation, not treated with the antitoxin, 2,017 died, or a mortality of 45.36 per cent.

3. That all the cases recovered in which the antitoxin-treatment was begun on the first day of the disease; that 2.83 per cent. of the cases died in which it was begun on the second day; that 9.99 per cent of the cases died in which it was begun on the third day; that 20 per cent. of the cases died in which it was begun on the fourth day; that 33.33 per cent. of the cases died in which it was begun on the fifth day; and that 41.38 per cent. of the cases died in which it was begun after the fifth day.

The average quantity of serum administered, hypodermically, was from 1 to 10 cubic centimeters (15 minims to 2½ fluidrams) in mild cases, and from 10 to 25 cubic centimeters (2½ to 6¼ fluidrams) in severe cases.

The injection was made either in the gluteal region or in the back, below or between the shoulder blades; and if the patient was not better the next day another was given him. The second dose was similar to the first or somewhat smaller. Aronson says that one should not hesitate to give a dose of 50 cubic centimeters ($12\frac{1}{2}$ fluidrams) in malignant cases, and Seitz suggests intervals of ten hours between doses. The serum of the immunized horse, Roux claims, is wholly uninjurious to man, even in large doses. Injected under the skin, it is immediately absorbed, without giving rise to any local irritation.

It should be borne in mind that the serum has a destructive effect on the red blood-corpuscles, and that the following secondary effects have been observed in a few of the cases treated with it: Erythema multiforme; an urticarious eruption associated with malaise, glandular enlargement, and paresthesia; pains in knee-joints, ankle-joints, and elbow-joints, and swollen and reddened ankle-joints; a purpuric condition. The secondary effects, however, did not last longer than several weeks.

Bissell, W. G.: Bacteriologic Examination in the Diagnosis of Diphtheria. (*Med. News, Phila.*, 1895, lxvi., 122.)

As to the points, in conclusion, which may be definitely stated, in relation to the bacteriologic examination in the diagnosis of diphtheria, there are the following:

1. A positive diagnosis of diphtheria can be reached in the majority of all suspicious cases by careful examining of the primary culture inside of twenty-four hours.
2. In cases in which the bacillus is not found there is little chance of infection.
3. In those cases in which the diphtheria-bacilli are found the cases should not be considered free from infective powers until subsequent bacteriologic examinations fail to reveal the organism.

Gnichtel, A. L.: A Case of Diphtheritic Vultitis in a Child. (*Journ. Cut. & G. U. Diseases*, 1894, xii., 532.)

The patient, a girl, aged one year, first came under observation on September 11, 1894. The mother stated that about five days previously the child had become irritable and restless, and showed other signs of pain, which were referred to the genital region; these symptoms were aggravated during micturition.

An examination of the vulva revealed several patches of false membrane covering anteriorly the internal portion of both labia majora and nymphæ, and invading the urethral orifice. The membrane was firmly attached and grayish-white in color. The mother stated that two fatal cases of diphtheria had recently occurred in the house in which she resided, the last one about one week before her child was taken ill. There were no throat symptoms. A bacteriological examination revealed the presence of the diphtheritic bacilli. The patches disappeared under the use of local applications—chiefly peroxide of hydrogen and bichloride of mercury—and the child made a good recovery. At no time while the patient was under observation were any marked constitutional symptoms noted.

Phillips, Sidney: Cases of Œdema of the Upper Eyelid during Scarlet Fever. (*Brit. Med. Journ.*, 1895, i., 194.)

Three cases are reported, occurring in the London Fever Hospital. Œdema of the lids in scarlet fever may occur from nephritis as part of general dropsy, but in these cases albuminuria was absent or had passed off when the œdema appeared; the œdema was unilateral, and the eyelid became livid and tense, and not white and doughy, as in renal dropsy. Œdema of the lid as a complication of scarlet fever is not mentioned in the text-books; and, apart from this fact, these cases seem to be of the same nature as the five cases of plastic cellulitis of the orbit brought before the Ophthalmological Society by Mr. Lawson. In the discussion that ensued at the Society considerable doubt was expressed as to the etiology of the disease. In all the three cases reported the œdema was associated with suppuration in the middle ear; and from observation of the cases at the time, the association was more than a coincidence. Before the tympanic membrane ruptured, or when discharge from the ear became less free, the œdema increased, and in the most severe case the mastoid process became very tender, and it became a question whether trephining over it would be required. Mr. Hulke mentioned at the Ophthalmological Society that he had seen cases of the same sort after influenza and measles, in both of which complaints suppuration in the ear is very prone to occur, and in one of Mr. Lawson's cases he ascribed the cellulitis to a previous tonsillitis, which may possibly have led to blocking of the Eustachian tube. It seems most probable that one of the suggestions made by Mr. Hulke as to the causation of the cellulitis—namely, thrombosis of the cavernous sinus—is the correct one, at any rate in most cases, for suppuration in the middle ear may set up thrombosis in the inferior petrosal sinus, extending into the cavernous sinus.

Morgenstern, Julius: Acute Gonorrhœal Vulvo-Vaginitis and Urethritis in an Infant at Birth. (*Med. Rec., N. Y.*, 1895, xlvii., 143.)

The patient was first seen on October 15, 1894. There was a history of a scant passage of urine since its birth, which event took place three weeks previously; the little urine that was passed was discharged guttatim. On local examination of the genitals, nothing could be seen except possibly a slight reddening; there was no sign of any local discharge. A probe introduced into the urethra encountered no obstruction. On percussing the bladder no fulness could be detected. The child seemed bright enough, and its face depicted no sign of pain. No positive diagnosis was possible.

The babe was again seen on October 22d. On local examination quite a different picture was presented. The mucous membranes of the labia majora, nymphæ, vestibule, and anterior portion of the hymen were reddened and engorged, and so tender and painful that the child screamed when the parts were touched; there was a thick, creamy, muco-purulent discharge present; there were excoriations about the perineum. More urine was now voided than formerly, but the quantity was still very small. Gonococci in abundance were found in the discharge.

The treatment consisted in rest to the parts, cleanliness, antisepsis, and the use of an astringent—briefly, in local bathing and syringing with a warm sublimate solution (1 to 10,000); Beta naphthol and bismuth powder was well dusted upon the inflamed parts; then boracic acid lint was placed between the vulva to absorb the discharge; the diaper answered the good purpose of an occlusion bandage. No other treatment was necessary.

Washbourn, Goodall and Card: A Series of Eighty Cases Treated with Diphtheria Antitoxin, with Observations on Their Bacteriology. (*Brit. Med. Journ.*, 1894, ii., 1417.)

Mode of Injection.—The injection was made into the flank with strict aseptic precautions. The quantity injected varied from 5 to 30 c.cm. at one dose, the total quantity during the course of any one case varying from 5 to 90 c.cm. With a well-made syringe no difficulty is experienced in injecting as much as 20 c.cm. at a time; 182 separate injections were made, and in none of them was there the slightest sign of any local inflammation.

Results and Statistics.—Eighty patients under 15, certified to be suffering from diphtheria, were treated; 8 were excluded from the statistics because they were clinically as well as bacteriologically not cases of diphtheria. The remaining 72 cases would have clinically been considered diphtheria, and can thus be compared with previous cases. The following table shows the results obtained:

Case Mortality of Diphtheria in Children under 15 at the Eastern Hospital.

	Cases.	Deaths.	Mortality per Cent.
1893	397	166	41.8
January 1st, 1894, to October 22nd, 1894	400	144	36.0
January 1st, 1893, to October 22nd, 1894	797	310	38.8
September 14th, 1894, to October 22nd, 1894 (39 days). Not treated with serum	72	28	38.8
October 23rd, 1894, to November 27th, 1894 (36 days). Cases treated with serum	72	14	19.4

It will be seen that the mortality has been diminished by one-half. The diagnosis of all diphtheria cases at the Eastern Hospital since 1892 has been personally supervised by one of the authors (E. W. G.). It is the opinion of this observer that the cases treated with the serum were rather above than below the average severity. Not much stress was laid on comparisons with other hospitals on account of the varying standards of diagnosis. During the period of antitoxin treatment at the Eastern Hospital, the mortality at the Western, South-Western, Fountain, and South-Eastern Hospitals was 33.3, 32.2, 30.5, and 23.6 per cent. respectively. At the last named hospital the number of cases was too small for accurate comparison.

Of the 72 cases in the series only 61 showed diphtheria bacilli; of these 61 cases 13 died, a mortality of 21.3 per cent., considerably lower than that (38.8) of the previous series of 72 cases clinically diphtheria. An account was given of the cause of death in the fatal cases. In 10 death ensued from the poisoning of diphtheria, and in the rest from complications. In one case death occurred within eight hours and in another thirty-two hours after admission.

Tracheotomy.—There were 9 cases of tracheotomy, and 6 recovered. In 13 previous series of 9 tracheotomies the number of recoveries varied between 0 and 4, and the average number of recoveries was 1.75.

Apart from the curative action, two other effects were noticed—a rash, and the onset of joint pains. The rash occurred in 25 per cent. of cases, and appeared from seven to nineteen days after the first injection. It was of an erythematous character, and was sometimes accompanied by pyrexia. Except for itching it gave rise to no further inconvenience. In 6 of the cases there were joint pains, which appeared about the same time as the rash, and lasted at most three days.

The hips were most frequently attacked; there was pyrexia, no cardiac affection, and the condition of the patient was never serious. It was noticed that the incidence of rash and joint pains was greater in the cases treated with the serum from the first of two horses from which it was obtained, than in those treated with serum from the second. The latter serum was much stronger than the first, and was used in smaller doses. With the exception of the antitoxin no other treatment was adopted, except that complications were treated *secundum artem.*

Sears, G. G.: A Case of Congenital Diaphragmatic Hernia. (*Bost. M. & S. J.*, 1895, cxxxii., 107.)

The subject of these notes was born in the Boston Lying-in Hospital. The child, an apparently perfectly formed, seven-pound boy, was born in December, 1885, after an easy labor, the second stage lasting but an hour. Immediately after birth it gave two or three short, sharp cries, and then, though it seemed to make every effort, it was unable to produce a sound. Respirations became gradually shorter and quicker, cyanosis deepened, and death resulted an hour later. The only abnormality found was the position of the apex-beat in the right axillary line. Only a most superficial physical examination, however, was made, as all efforts were concentrated in encouraging his attempts to breathe. The autopsy showed the following condition:

"The greater part of the small intestine, with the stomach and spleen, were found in the thoracic cavity, into which they had passed through a hole occupying the greater part of the left side of the diaphragm. The left lung was reduced to a single lobe (the upper), and pressed upwards and forwards. The right lung was normal, but pressed upward by the heart which was in its pericardium in the lower part of the right pleural cavity. The lungs were compressed, but could be distended. Nothing else abnormal noticed."

Mitchell, S. Weir (Philadelphia): Ataxia in a Child of Three Years with Retained Muscle Reflexes. (*Med. News*, Phila., 1894, lxv., 1.)

This is the only case of this form of malady which the reporter has seen. The patient is a boy, three years and five months of age, with a poor family history—alcoholism, tuberculosis, and parents are second cousins. At eight months of age, the child had a severe attack of diarrhœa with fever, intolerance of light, moaning and great restlessness, followed in a few days by a "spurious hydrocephalus." However, he made a rapid recovery, but two months later it was noticed that he could not sit erect. At thirteen months nystagmus was noticed, and at fourteen months he had an attack of bronchitis followed by meningeal symptoms, but he made an apparently good recovery. He was two years old before he could move about on the floor, and three years two months old before he could pull himself up to a standing position.

Present condition: The child is pale, the muscles are fair in size but flabby, and the head is large but symmetrical.

He does not crawl, but he can shuffle about, seated; he can walk about when supported, but with a marked ataxic gait and with feebleness. He "kicks" the legs forward in the effort at locomotion. The erectores spinæ are weak. He cannot feed himself.

Incoördination is marked in the hands, but there is no tremor. He uses his left hand better than the right, and possibly the left leg a little better than the right one.

Sensation is perfect everywhere. Knee-jerks and elbow-jerks are normal, and no ankle-clonus exists. Muscle-jerks of the arms and legs give normal response on stimulation with the percussion-hammer. Electrical examination shows no alteration to faradism or galvanism. The child seems intelligent and alert, though timid and nervous. No signs of pain were elicited at any time during the examinations. He talks fairly, drawls his words somewhat, but speeks freely. The mouth and teeth are normal. There is no preputial adhesion, no incontinence of urine, and this excretion is normal.

Eyes (examined by Dr. A. G. Thompson). The pupils react normally to light and accommodation. There is no choked disc. The nystagmus of both eyes and the convergent squint of the left eye are, therefore, not due to any refractive error, but are incoördinate movements, such as are seen in other parts of the body.

All other functions and organs are normal.

It seems reasonably clear that the cause of this interesting malady was not prenatal. There are no eye-ground signs. There is no wasting. There is no palsy of any nerve. There is unusual power from crown to sole; there is no sensory loss, and yet he cannot stand at all without some stay. Aided by a finger he can walk, throwing his feet out, and "clumping" precisely like a true spinal ataxic. But no such case in an adult had ever such a degree of disorder without disturbed feeling, or pain, or anesthesia, or girdle pain, or pupillary signs. Here are none of these. Also, the ataxia is in all the limbs, but is worse in the legs. In the arms and legs are found normal tendon-jerks, so called, and also normal reinforcements of these muscle-reflexes. There is nothing spastic in these. Sometimes they are excessive, probably from reinforcement due to emotion. There is no clonus; but this is rare in the child under any conditions. If this were a spinal ataxy, with added lateral sclerosis, we should have spastic reflex signals and the usual feebleness apt to be seen in that disorder; also the high ataxic movement of the feet seen in our case would be wanting.

Tabes of all kinds is as a rule progressive. This lad continuously improves in the use of his limbs. This is, therefore, neither tabes, nor spastic ataxia, nor is it the picture of hereditary ataxia; neither has he pain-crises, or trophic changes, so that probably the posterior nerve-roots and the gray spinal centres are to be excluded from a share in this disorder.

It seems possible that the double brain-diseases he is said to have had, and which left his power of mind and of muscle unimpaired, may have fallen on the cerebellum and left it permanently injured in one of its functions. As against this is the lad's gain in steadiness; but even with most of the cerebellum gone birds have after a year been able to fly. The mechanisms of replacement of function are not as yet clear to us, although we are often called on to recognize their value.

It is then possible that the cerebellum may have suffered over a large area of the surface, and that this damage may have been in part repaired, and a share of the functional activities safe-guarded and replaced by the other mechanisms which contribute to the integrity of equilibration.

The case is to the eye a typical spinal ataxia; examined more nearly, much is lacking to make the perfect picture of that disorder or disease. But almost as much is also wanting to assure us of a cerebellar origin, and one should remember that we have hardly any studies of spinal ataxia in childhood.

When as thoughtful a man as Gowers admits that the pain, ataxy, or anæsthesia may be due to disease either of the cord or of the peripheral nerves, one sees the tangle into which we have gotton our knowledge of the mechanism of harmonious muscle-action, and its offspring, equilibration.

It is conceded that integrity of the knee-jerk, or any tendon-jerk from a blow on the tendon, implies wholeness of the neural arc of conduction and response from the centres concerned. When there is distinct, typical ataxia without spastic states, and with normal presentation of knee-jerk and ankle-jerk, it seems reasonable to conclude that the cause of this ataxy must lie above the region concerned in the muscle-reactions.

The law which applies to knee-jerks and all tendon-jerks explains *in part* the direct muscle-jerk from a blow. For here, this response is due to two contributions, one the intrinsic muscular irritability, and one the addition from the cord. The former continues after nerve-section; the latter is lost, but its loss is only to be proved by the fact that *you can then no longer reinforce the direct muscle-jerk by remote voluntary motion.*

Such is the case late in posterior sclerosis. A blow on the muscle causes a jerk, but reinforcement is no longer possible. The response from tendon-jerk is only a finer, a more delicate, expression, and a larger one, of the same phenomenon. It is increased by tension, and obeys the law of the so-called tendon-jerk. In this boy neither muscle-jerk nor tendon-jerk is gone, nor yet their reinforcement.

The facts as to all this matter of sensory and motor reinforcement remain as yet almost unnoticed in the text-books, and unused by clinical inquirers.

As regards this boy, the conclusion is that the cause of his remarkable ataxic state must lie above the seat of response to the tendon-jerks, and does not interfere with the tract of reinforcement, which is easily obtainable.

II.—SURGERY.

Churton: Perforation of Vermiform Appendix in a Child. (*Brit. Med. Journ.*, 1895, i., 200.

He showed specimens from this case, a child, aged $2^1/_4$ years, previously healthy, but not judiciously fed. November 25th, 1894, slight diarrhœa; November 26th vomited dinner during the night; November 27th, feverish, looked ill, eyes sunken, vomited everything, occasional colicky pain; November 28th, tender in right iliac fossa, obscure swelling there, pains continued. December 1st, abdomen larger, not tender except in cæcal region; December 2d, admitted into infirmary; strong visible peristalsis every five or ten minutes in coils of small intestine; nothing felt in rectum or pelvis; pulse 100, temperature 99°. Operation declined until December 5th. Incision by Mr. Mayo Robson, found two ounces of pus in ileo-lumbar fossa. December 6th, decided improvement in everything but pulse, 145; bowels acted spontaneously; evening, pains returned; pulse 150. December 7th, died at 7 A.M. Necropsy: Perforation of appendix half an inch from tip. Thick inflammatory mass lying between ileum and cæcum. Small intestine: first five feet normal size; last two feet formed a loop gently adherent to right wall of pelvis; mucous membrane quite smooth for half an inch at point of kinking and obstruction; above and below valvulæ conniventes conspicuous. Intermediate intestine distended; contiguous coils adherent by butter-like inflammatory material; no general peritonitis. Death had resulted from the obstruction.

Werder, X. O.: Nephrectomy for Sarcoma of the Kidney in a Child Twenty-Five Months Old. (*Med. and Surg. Rep.* 1894, lxxi., 903.)

The patient was a girl twenty-five months old, and the growth was noticed for the first time three months ago when it was about the size of an egg. The growth has rapidly increased in size until it now occupies the left abdominal cavity, extending from the ribs to the crest of the ileum, and downwards into the left iliac fossa.

The tumor was removed in August 29th, 1894, and child made a good recovery, being discharged from the hospital on the fifteenth day. The tumor was irregular in shape with nodular growths at either end; it was attached to the anterior surface of the kidney, directly continuous with its structure, but only involving about one-third of the organ. Section showed interior growth to be soft, containing brain-like substance, in one portion beginning to break down. Weight of tumor $2\frac{1}{2}$ pounds; kidney not involved by growth, normal. The microscopical examination showed it to be myo-sarcoma.

Baugh, J.: Strangulated Mesenteric Hernia. (*Ontario Med. J.*, 1894, iii., 153.)

The patient was a girl seven years old, and three days before the onset of the symptoms she received a severe blow in the abdomen. On November 8th, shortly after going to bed, she awoke suddenly and complained of pain in the stomach. There was marked evidence of extreme shock, due probably to some abdominal trouble. The next afternoon an abdominal section was done and it was found that a small coil of intestines, about fifteen inches long, had been forced through an opening in the mesentery and had become strangulated. Extensive adhesions had formed at the point of constriction which had to be broken down and the constriction divided, before the loop of bowel could be withdrawn.

The herniated portion of the bowel presented a greenish appearance, while on the proximate side of the constriction, for about four feet of their length, the intestines were jet black and gangrenous. The intestines and abdominal cavity were washed well with hot water and section quickly closed. Patient did not rally. Time of operation, twenty minutes.

Lane, A.: Supernumerary Testicle. (*Med. Rec.*, 1895, xlvii., 27.)

A boy, fifteen years of age, was exhibited before London Clinical Society, from whom Mr. A. Lane had removed a supernumerary testicle. Such cases are rare, and the President, Mr. Hulke, remarked that he had not met one. Those recorded by old writers were probably encysted hydroceles of the cord. An analogy with this case was double kidney, each with its own ureter, an example of which he had met with.

Homans, John : A Case of Perityphlitic Abscess in a Child Four Years Old in which the Appendix was not the Cause of the Abscess : Recovery. (*Bost. M. & S., J.*, 1894, cxxxi., 580.)

The patient was a girl, four years old, and the operation was done five days after the onset of the symptoms. The usual abscess found in appendicitis was found, opened and drained. She made a rapid recovery.

She has been perfectly robust and well since. Two years have now passed, and her constipation has been less than before the operation. The fact that the appendix was not at fault—was neither constricted, swollen, gangrenous, nor perforated—and that yet there was the usual abscess found in cases of appendicitis, leads him to think the case worth reporting. Perhaps as the appendix was not affected in this instance, it may not be in some others. Except for the youth of the patient and the fact that the appendix was normal and sound, the case does not differ from other cases that we call appendicitis when we operate on them and do not happen to see the appendix.

Morton, Thomas S. K.: Case of Gunshot Wound o Liver and Lung. (*Med. & Surg. Rep.*, 1894, lxx., 720.)

The patient was a boy nine and a half years old and was shot at short range by a 32-calibre revolver. The abdomen was opened and it was found that the ball had passed through the right lobe of the liver two and a half inches behind the anterior margin, then emerged just above the gastro-hepatic omentum, had almost totally destroyed the lobus Spigelii, then had torn a large hole in the lesser omentum, again perforated the peritoneum, struck the first lumbar vertebra, and became lost.

He died in a few hours and the post-mortem examination showed that the ball had passed between the aorta and vena cava, and perforated the right crus of the diaphragm before striking the first lumbar vertebra. In the latter it cut a large groove, and was deflected upward and outward through the pleura and into the substance of the right lung, where it was found imbedded. The lower lobes of this lung were distended by blood, and over a quart in addition filled the pleural sac. No wounds of other viscera were discovered.

Halsted: Report of Twelve Cases of Complete Radical Cure of Hernia, by Halsted's Method, of over Two Years Standing. Silver Wire Sutures. (*Bull. Johns Hopkins' Hospital,* 1894, v., 98.)

Case 2.—F. F. æt. seven (boy). Small, right, congenital, inguinal, reducible hernia. Operation in October, 1889 (four years and four months ago). Wound healed per primam; there is a narrow linear scar, no impulse on coughing, no change in cord or testicles, no discomfort from wound.

Case 4.—E. P., æt. seven (girl). Small, right, oblique, inguinal, reducible hernia of two months duration. Operation November, 1890 (three years and four months ago). Healed per primam, except a small superficial stitch abscess, the scar is white, 11 cm. long and about ¾ cm. wide, firm, no impulse, no discomfort.

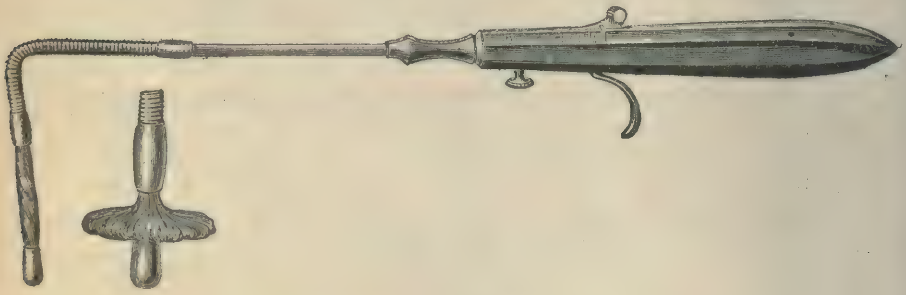
Case 5.—A. E., æt. five. Small, right, oblique, inguinal, reducible hernia of four years duration. Operation by Dr. Brockway (McBurney's method) in July, 1890. The hernia recurred, and in November, 1890 (three and one-half months afterwards), a second operation by Halsted's method was performed. The wound healed per primam, notwithstanding the fact that the child had whooping-cough. It is now three years and three months since the last operation, and there is no return of the hernia.

Case 8.—W. C. W., æt. two and a half. Small, right, inguino-scrotal, congenital, reducible hernia. Operation July, 1891 (two years and eight months ago). Scar white, linear, 8 cm. long, firm. No impulse on coughing. No change in cord or testicle.

Case 11.—J. W. B., æt. 5. Small, left, oblique, inguinal, reducible hernia, following whooping-cough at four months of age. Operation September, 1891 (two years and five months ago). The wound suppurated at its upper third and healed by granulation. The scar is 2 cm. wide it has stretched some. Is 8 cm. long and firm. No impulse on coughing. Testicle and cord normal. There had been an epididymitis following the operation, the induration from which lasted for six months.

Howitt, Henry: Remarks on the Surgical Treatment of Intussusception in the Infant, based on Two Successful Cases. (*Med. Jour.. N. Y.*, 1894, lx., 567.) In it he recommended early abdominal section as being the best method of treatment to reduce the high mortality rate of intussusception in early infancy. Of the two cases cited, one child had been, at the time of the operation, under three, and the other under six, months of age. In regard to the steps of the operation, among other things he advises a small median incision, evisceration, reduction by pressure on the apex of the intussusceptum while the intussuscipiens was drawn in the opposite direction, and forcing the contents of the ileum into the colon before returning the intestines into the abdomen.

Nutt, G. D.: Instrument for Removing Obstruction in Membranous Croup. (*Journ. Am. Med. Asso.*, 1894, xxxiii., 654.)



This illustration explains the method of using the instrument very clearly. He reports one case, a child aged five, in which it acted satisfactorily, although the child subsequently died from exhaustion.

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ON WHOOPING COUGH: ITS GREAT FATALITY, AND THE NECESSITY FOR ISOLATION AND REST IN ITS TREATMENT.*

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The reasons for the selection of whooping cough as the subject of the monthly essay will be more apparent, I trust, at the end than they may seem to you at the beginning of this paper.

It is strange in the general revival of the study of the infectious contagious diseases that pertussis should have come in for such a small share of attention and that so little change should have taken place in plans in treatment which have been the same for an indefinite period. It is true that we do not bleed and give nauseating emetics, as in the days of Cullen, but has the discovery of the infectious nature of the disease led to the employment of the modern methods of prevention which we use with other diseases of the same class?

Moreover whooping cough above all other diseases is a people's disease; its diagnosis, management and treatment are largely in the hands of the laity. Boards of Health have no control over it; there are no rules regulating its diffusion, and the medical profession have abdicated the field to the nostrum vender or to domestic medicine.

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* Monthly Essay; read before the Medical Society of the District of Columbia, January 23, 1895.

Such being the position of the medical profession and the sanitary authorities toward whooping cough, the question arises whether the position is justified by the nature and extent of the disease as it affects communities. Is its mortality so slight that it should not receive the advantages of modern preventative science? I propose to show that not only is this not the case, but that it stands along with scarlet fever and measles as a death producing disease. The strange anomaly is presented of the utmost expenditure of effort in the case of one contagious disease and the utmost indifference as regards one equally contagious.

What can be more exact than the present management of a case of scarlet fever with all the refinements of isolation, disinfection and excessive attention to details; on the other hand what can be more full of negligence, more absolutely empty of all precautionary measures than the system with which we deal with whooping cough.

Let us examine into the actual and relative mortality of whooping cough in order to discover the reason, if there is any, for this difference; let us see if the world has been right in this or if it has paradoxically controlled the spread of the one disease and contributed to the spread of the other.

From 1848 to 1855, 72,000 deaths or one-fortieth of the whole number of deaths were due to whooping cough in England and Wales. In one year in England there were 500,341 deaths; of these 10,318 were due to whooping cough. In 1876 in England scarlet fever had 11,045 victims, measles 9252, whooping cough 10,201; 844 less than scarlet fever and 949 more than measles.

In Basle, according to Hagenbach, the mortality of whooping cough was greater than that from any other disease except typhoid fever and diphtheria.

In Berlin in 1887 there were 257 deaths from scarlet fever, 223 from measles and 535 from whooping cough; about the same proportion continued during subsequent years.

In 1893 in London there were 2,330 deaths from whooping cough.

In the year ending June 1, 1870, whooping cough had 9,008 victims in this country.

In the United States, according to the Census of 1880, diphtheria leads the list of infectious diseases with 19,854 annual deaths, whooping cough comes next with 10,313, scarlet fever is third with 10,142, while measles has only 5,481 deaths.

The Census of 1890 gives the same place to whooping cough; measles stands first with a mortality of 9,256, whooping cough second with 8,432, and scarlet fever last with 5,969 deaths. Diphtheria and croup have a much greater mortality of 41,677. These figures are admitted not to be exact as regards the actual number of deaths, being underestimates, but the relative proportion between the different diseases may be assumed to be correct.

A ten year record in New York City shows 4,094 deaths from whooping cough and 4,062 from typhoid fever.

TABLE I.

Mortality in New York, Brooklyn, Baltimore and Washington, from diphtheria, scarle fever, measles and whooping cough and the rate of death from each cause to 10,000 inhabitants’ for year ending May 31, 1890.

FROM THE UNITED STATES CENSUS OF 1890.

Cities of	Diphtheria.	Ratio to 10,000 Pop.	Scarlet Fever.	Ratio to 10,000 Pop.	Mea	Ratio to 10,000 Pop.	Whooping Cough.	Ratio to 10,000 Pop.
New York.	10,134	66.88	4,367	28.82	3822	25.22	2,820	18.80
Brooklyn	5,018	62.24	1,840	22 82	767	9.51	1.134	14.07
Baltimore.....	1,188	27.34	296	6.82	733	16.88	501	11.54
Washington.	515	25.49	274	13.50	175	8.62	358	17.72

In Table I. the number of deaths from diphtheria, scarlet fever, measles and whooping cough for the six years ending May 31, 1890 (Census of 1890) is given for the cities of New York, Brooklyn, Baltimore and Washington. It will be seen that diphtheria leads the list in all; of the other three diseases scarlet fever comes first in New York, then measles with 545 fewer deaths than from scarlet fever and last whooping cough with 1,880 deaths one thousand less than measles. In Brooklyn scarlet fever had 1840 deaths, measles 1,075 less, but whooping cough had 367 more than measles and 606 less than scarlet fever.

In comparing the deaths from different causes in the various states, according to the Census of 1890, it is interesting to note that whooping cough claims as many, often more victims than the other more dreaded diseases. In the following list of ten States whooping cough has more fatal cases than scarlet fever and in most of them more than measles.

In Baltimore measles is first with 733 deaths, whooping cough second with 501 or 232 less than measles, scarlet fever is last with 205 less than whooping cough.

In Washington whooping cough leads the list with 358 deaths; scarlet fever is next with 274, 84 less, and measles has 175, 183 less than whooping cough.

The ratio of deaths from whooping cough to 10,000 inhabitants is 18.10 in New York; 14.07 in Brooklyn; 11.54 in Baltimore and 17.72 in Washington.

It will be seen, therefore, that although as compared with scarlet fever and measles the mortality from whooping cough is higher in Washington than in any of the four cities, yet the ratio of deaths from whooping cough to 10,000 population is greater in New York than it is here. Washington, comes next to New York, then Brooklyn and last Baltimore.

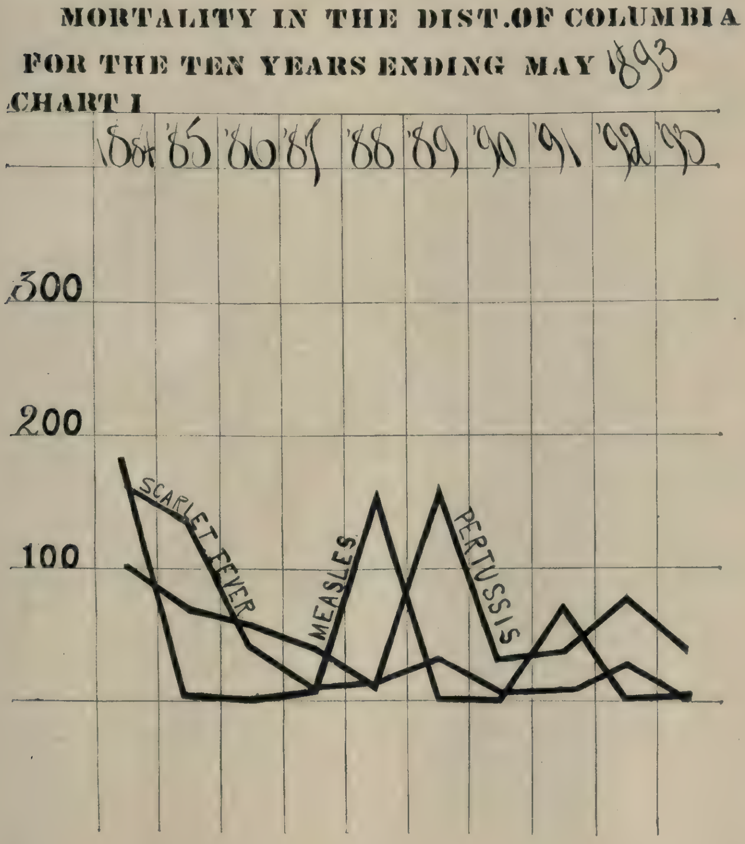
TABLE II.

Total mortality in the District of Columbia from scarlet fever, measles, and whooping cough for ten years from 1884 to 1894. Compiled from the report of the Health Officer.

Year.	Scarlet Fever.	Measles.	Whoop. Cough.
1884.	168	179	104
1885.	137	9	70
1886.	48	3	63
1887.	15	14	46
1888.	19	159	17
1889.	31	4	162
1890.	14	10	31
1891.	13	70	38
1892.	26	5	76
1893.	7	10	45
Totals	478	463	652

In Table II. compiled from the records of the Health Officer, the total deaths from scarlet fever, measles and whooping cough in the District in the ten years, 1884 to 1894, are given in parallel columns. The whole number of deaths from whooping cough was 652, from scarlet fever 478 and from measles 462; 174 more children died from whooping cough than from scarlet fever, and 189 more than from measles during the ten years. The average annual death rate was 46.3 from measles, 27.8 from scarlet fever and 65.2 from whooping cough. *See Chart I.* for illustration of these differences in the death rate.

Chart I.—Mortality in the District of Columbia from scarlet fever, measles, and whooping cough for ten years ending May 1893.



MORTALITY IN THE DIST.OF COLUMBIA FOR THE TEN YEARS ENDING MAY 1893

CHART I

The facts given in these figures are of immense importance. They bring home to us the consciousness that the disease of which we have so little concern, which we do but little to cure and still less to prevent, is annually destroying more lives in our city than scarlet fever of which we have such dread that there is no precaution too precise and no regulation of the Health Office too severe which do not meet with our unqualified approval.

We have not waked up to the knowledge that whooping cough is such a fatal disease as it is here shown to be. We are lulled into security by the statements of the books and by a blind following of the traditional way of looking at the subject without seeing it.

It is true that there are a larger number of cases of whooping cough than of scarlet fever and that the percentage of deaths to the total number of cases is not so great in the former as in the latter disease; but at certain ages the mortality is greater than scarlet fever and in certain epidemics it is quite as great at all ages.

The ratio of deaths is variously given by authors; the lowest is 2.7 per cent. (Kutlinger), the highest is 15 per cent. (Whitehead). In epidemics it has reached 48 per cent. Under one year the rate is 25 per cent.; from one to two years 13.8 per cent.; from two to five years 3 per cent.; five to ten years 1.18 per cent. Thirty per cent. of all the fatal cases occur in the first year of life.

The mortality rate differs also very much at different periods of the year. In Table III. the number of deaths by months for the six years ending May 31, 1890, is given in parallel columns in the cities of New York, Washington and Baltimore. In each of these cities the deaths were more numerous in July, August and September than in other months.

TABLE III.

Mortality from whooping cough by months for six years ending, May 31, 1890. From United States Census of 1890.

Month.		New York.	Washington.	Baltimore.
January	-	227	27	33
February	-	210	17	29
March	-	243	28	41
April	-	230	23	37
May	-	182	17	28
June	-	182	20	39
July	-	313	45	60
August	-	327	55	69
September	-	301	48	45
October	-	213	36	49
November	-	161	19	33
December	-	217	23	38
Totals		2,810	358	501

Chart II. shows the variation of mortality by months in the three cities during six years.

Chart III illustrates the varying mortality by months in 31 large cities of the United States in one year.

Chart IV. shows the different fatalities from whooping cough, measles and scarlet fever in New York City.

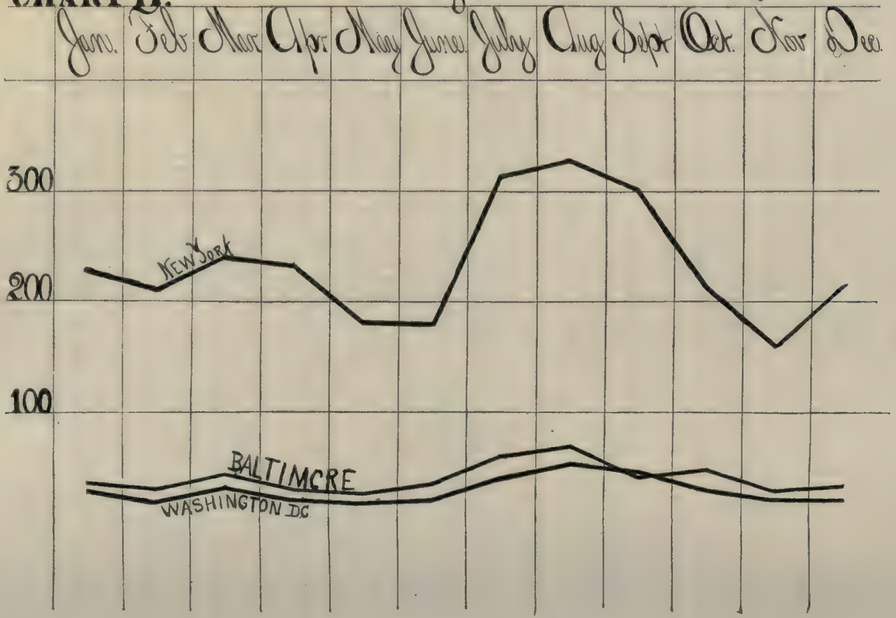
The discussion of the causes of the high summer mortality from whooping cough will be considered later. The main point to which attention is desired here is that pertussis holds its own with scarlet fever and measles as a life destroying disease.

What are the causes of this immense destruction of child life which has been going on for centuries. It was estimated that from 1749 to 1764 a period of 15 years 43,000 children died from it in Sweden alone.

An estimate based on the Census of 1880, adding nothing for the increase of population, would show that in ten years more than one hundred thousand children had died from whooping cough in the United States, which would make a total of over 200,000 in the twenty years ending in 1900.

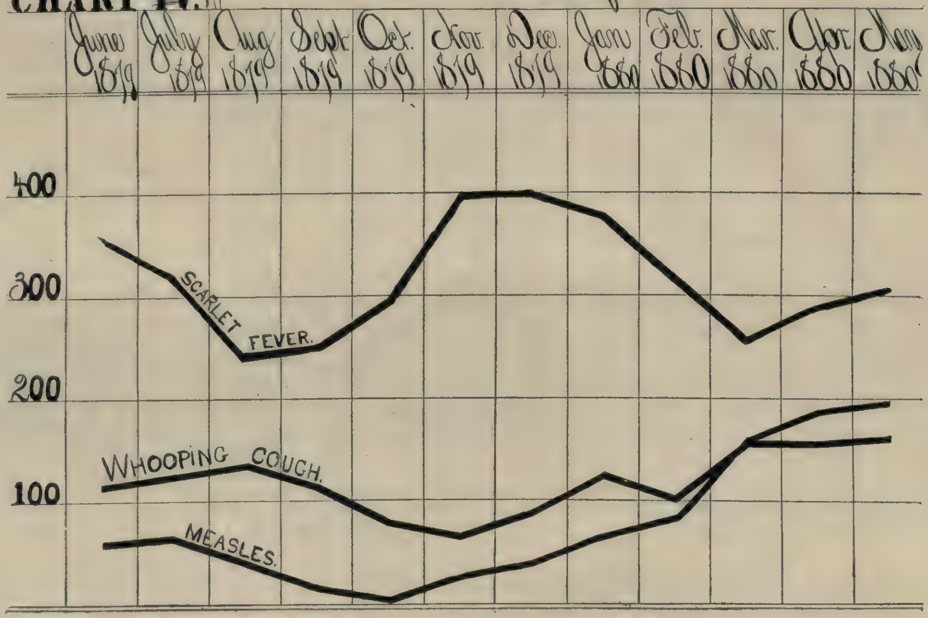
CHART II.

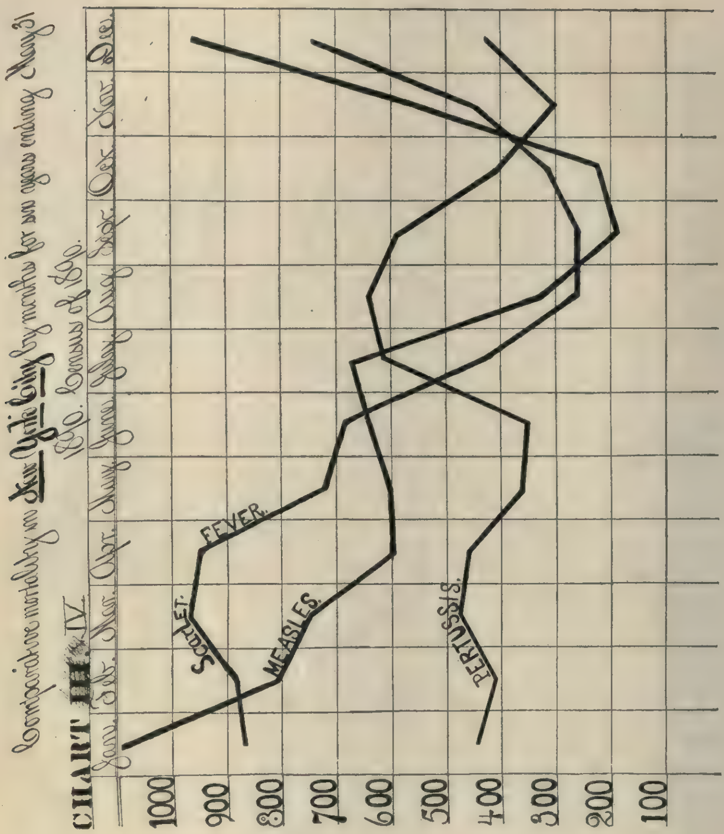
Mortality from Whooping Cough by months for six years ending May 31, 1890 U. S. Census of 1890.



Mortality by months in 21 large cities of the U.S. From U.S. Census of 1880.

CHART ~~IV.~~ III





Through the courtesy of the Health Officer a very careful study of all the death certificates in the Health Office during the last ten years has been made, and the causes of death in each reported case of whooping cough have been noticed and tabulated. The chief causes of death can be included under the following heads in the order of their frequency:

1. Cerebral Causes—Convulsions, Meningitis, etc.
2. Pulmonary Causes—Congestion, Inflammation, etc.
3. Asphyxia and Syncope.

TABLE IV.

CAUSES OF DEATH.	AGE.				SEX.		COLOR.			MONTHS.											
I. Cerebral Causes.........	1 year and under.	1 to 2 yrs.	2 to 5 yrs.	over five yrs.	M.	F.	W.	C.	Totals	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Convulsions............	80	35	21	4	56	51	24	83	107	10	7	12	9	11	6	25	23	19	9	5	3
Congestion of the Brain.	10	5	......	1	4	12	10	6	16	......	1	1	1	1	3	4	1	1	3	......	......
Apoplexy..............	1	......	......	......	1	....	1	....	1	......	......	......	......	......	......	......	1	......	......	......	......
Meningitis and Cerebritis	13	5	3	1	14	8	14	8	22	2	1	3	......	2	3	3	1	4	1	1	1
II. Pulmonary Causes.. ...	......	......	......	......	....	....	....	..	..	......	......	.. ..	......	......	......	......	......	......	......	...	
Congestion of the Lungs.	23	7	3	1	12	22	17	17	34	4	2	1	......	1	3	7	2	3	4	2	5
Pulmonary Hæmorrhage	1	......	......	......	....	1	....	1	1	1	......	......	......	......	......	......	......	......	......	......	....
Bronchitis.............	18	11	8	1	16	22	7	31	38	2	3	3	4	2	2	6	1	6	2	1	5
Pneumonia............	61	33	28	6	59	69	42	86	128	15	10	8	12	8	5	5	11	12	16	7	20
Atelectasis Pulmonum..	......	1	1	......	1	1	....	2	2	......	......	......	......	1	......	......	......	......	1	......	......
III. Asthenia & *Marasmus*	52	20	9	3	40	44	30	54	84	2	8	6	4	4	8	19	16	6	3	5	3
IV. Asphyxia and Syncope.	13	4	5	......	9	12	8	13	21	4	......	3	......	3	1	2	2	4	1	......	1
V. Diarrhœa and Dysentry	16	6	1	3	15	11	17	9	26	..	2	...	......	1	4	11	4	1	1	......	1
VI. Tuberculosis..........	1	5	6	4	6	9	2	4	15	1	2	2	......	2	......	1	1	2	1	1	2
VII. Pericarditis..........	1	......		......	....	1	1	....	1	......	....	......	......	......	......	......	......	......	1	......	....
VIII. Nephritis............	1	......	......	......	1	....	....	1	1	......	......	......	......	......	......	1	......	......	......	...	.....
IX. Measles..............	......	......	1	......	.	1	1	..	1	...	....		1	......	......	......	......	......	......	..	......
X. Malarial Fever.........	......	......	......	1	1	....	....	1	1	......	......	......	......	......	......	......	......	1	......	...	......
XI. Overdose of Cough Syr.	1	......	......	......	1	....	....	1	1	....	......	......	....	......	......	......	1	......	......	......	......

4. Asthenia, Marasmus, etc.
5. Diarrhœa, and Dysentry, etc.
6. Tuberculosis.
7. Pericarditis.
8. Nephritis.
9. Measles.
10. Malarial Fever.
11. Overdose of cough syrup. One case.

A glance at table IV. which contains records of five hundred cases will show that causes connected with the lungs were more common than others being 203, as compared with 146 from cerebral causes, and 84 from exhaustion, marasmus and like conditions. Next in order of frequency comes diarrhœa and dysentery with 26, and asphyxia and syncope with 21 deaths. Tuberculosis, following whooping cough, is given as a cause in 15 cases

Pericarditis; nephritis, measles, malaria, and an overdose of cough syrup claimed one death each.

Of the pulmonary conditions, to which death was attributed, broncho-pneumonia was responsible for nearly two-thirds of the cases; bronchitis and congestion of the lungs each for one-sixth; atelectasis is mentioned in two cases only and pulmonary hæmorrhage in one.

Convulsions bear the same relation to cerebral causes that broncho-pneumonia does to the pulmonary ones, causing 107 of the total deaths. Meningitis and cerebritis 22 and congestion of the brain 16; apoplexy is mentioned once only.

As compared with these causes death from slow wasting and exhaustion is not so common; 54 children out of the five hundred cases died of it. Sudden death from asphyxia and syncope is a much rarer cause, occuring in 21 instances only.

An enumeration of the causes of death with reference to age does not confirm the usual statement that cerebral congestion with convulsions is the most common cause of the tremendous mortality in the first year of life. Out of the whole 500 deaths, 207 were under the first year.

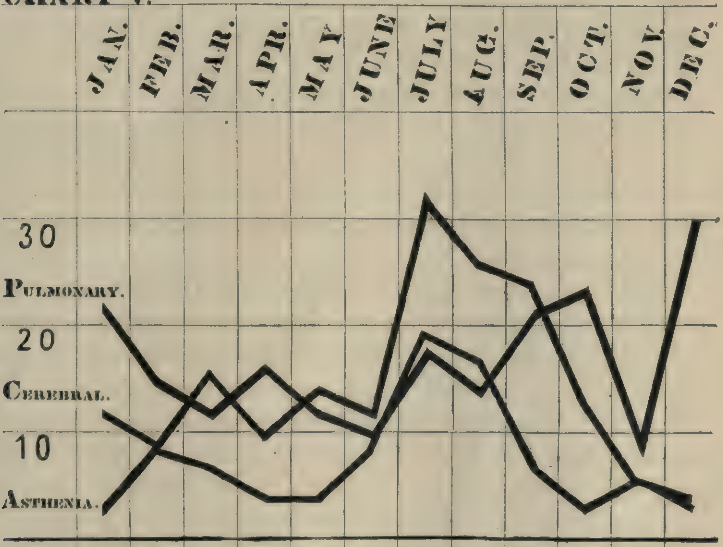
Of these 104 were connected with the brain and 103 with the respiratory organs so that there is little or no difference between the efficiency of the two causes in infancy.

Many other interesting facts might be mentioned which are seen by comparing the influences of age, sex and color, but figures may become wearisome and I pass on to speak of what bears more directly upon the purposes I have in view in connection with the treatment of the disease—I mean the influence of season in bringing about the development of cerebral and pulmonary causes of death respectively.

The deaths from pulmonary causes, especially from broncho-pneumonia occur in about equal numbers at all seasons of the year ; while convulsions and other cerebral causes are much more common in summer—*See Chart* 5.

DEATHS FROM WHOOPING COUGH IN WASHINGTON FROM THREE GROUPS OF CAUSES, BY MONTHS FOR TEN YEARS 1885 TO 1895

CHART V.



TOTALS. PULMONARY—203.
CEREBRAL—146.
ASTHENIA—84.

In the six months of autumn and winter beginning in November and ending with April, there were 121 deaths from cerebral causes; in the six months of spring and summer and early autumn there were 53 deaths, the fatality being half as great in winter as in summer.

Lesions in the respiratory system are as common however in the one season as in the other, winter having 105 and summer 98 deaths, a difference of only 7. July and August included by far the greatest number of deaths from eclampsia, and December the largest number from broncho-pneumonia, but the deaths from pulmonary lesions are distributed much more equally during the year than are those connected with the nervous system.

The deaths from intestinal causes as might be supposed, happened almost wholly in the summer months. More deaths also occur in summer than in winter from wasting and exhaustion.

In the effort to interpret these facts and to find the reason for the great fatality of whooping cough and in order to determine how it may best be prevented and cured, attention must first turn to the pathological changes, and then to the characteristic symptom—the convulsive cough and to its etiology.

There is no lesion which can be considered characteristic of whooping cough, that is no distinct, causal lesion around which all the symptoms and complicating lesions are grouped. In the beginning there is catarrh of the naso-pharynx, and this may be the only lesion coincident with the development of the characteristic cough.

In advancing cases this naso-pharyngeal catarrh becomes generalized by extension to the lachrymal ducts, the conjunctivæ, the eustachian tube and the middle ear, to the glottis, trachea, large and small bronchi and air vesicles. The more decided pulmonary lesions, emphysema, pulmonary collapse, pulmonary congestion and œdema and broncho-pneumonia are advanced pathological conditions accompanying the later stages or more intense forms of the disease.

The symptoms connected with the nervous system—

blindness, convulsions, hemiplegia, coma, etc., are due to congestion, transuded fluid in the ventricles, œdema of the brain and meningeal hæmorrhage.

The gastro-intestinal lesions are congestive and catarrhal; the changes in the kidneys are first congestive and then inflammatory.

Without going into questions which are attractive and interesting and in order to learn something of the reasons of this great mortality I would like you to fix your attention upon two points in connection with this disease. 1. The violent paroxysm of cough and their effect upon the heart and circulation. 2. The influence of the resulting heart weakness in the production of the conditions of the brain and lungs which are the most efficient causes of death.

Authors like Osler and Henoch have, from time to time, alluded to the temporary and even permanent injury to the heart in this disease, but the subject has been brought out with greater fullness and force in the papers of Drs. E. Helen Knight and Koplik, recently published, and by the experiments of Muller and Valsalva. These two experimenters have demonstrated; (1) That in the long drawn inspiration there is dilatation of the right heart, congestion of the lungs, diminution of blood in the left heart, and in the systemic circulation, and (2) that in the expiratory cough the heart is compressed, the venous system is engorged, the blood is forced into the left ventricle and into the aorta, the heart is emptied, its sounds and the pulse beat are weakened. The paper of Dr. Knight, based on the careful daily study of forty cases, dwells upon the disturbance of the heart and circulation and the great and continual strain to which the heart is subjected by the recurring violent pressure of the paroxysms; this disturbance is shown by the increased rapidity and irregularity of the pulse, its dicrotism and sustained tidal wave, seen in the sphymographic record, and due to the abnormal distension and relaxation of the coats of the arteries.

Both in this paper and that of Koplik, the more important fact is insisted on that the ultimate effect of this mechanical disturbance of the heart is to bring about a permanent dilatation of the ventricles (the increased area being demonstrable by percussion) with great and necessary weakening of their walls, which continues to effect the circulation during the intervals of the paroxysms. This is shown by the weakness of the heart sounds, the feebleness and irregularity of the pulse, the persistent dyspnœa, the œdema of the face and eyelids, and other evidences of venous stasis of organs.

From these disturbances of circulation especially from the venous congestion of organs we have, moreover, the cerebral congestion and œdema, the cause of fatal eclampsia and the albuminuria which Knight found in 56 out of 86 tests; albumen with blood being being seen in 8 cases with occasional hyaline and epithelial casts.

The pulmonary congestion which precedes and causes the bronchial catarrh is of course a part of this same condition; broncho-pneumonia comes from extension of the process to the small tubes and air cells; the rarefaction of the air in the alveoli and its effect upon epithelial growth has some part in bringing about the catarrh of the air passages: the traumatism of the mucous membrane from the violent cough is not without effect also.

The equal prevalence of pneumonia in summer as well as in winter in this city gives less importance to cold and exposure as a cause of bronchitis and pneumonia; undoubtedly they have some influence, but the feeble heart and mechanical congestion of the lung are more potent causes, at any rate, are preliminary and essential stages in the process of bronchial catarrh and broncho-pneumonia. The fact that the deaths in the country from whooping cough are to deaths in the city as 16 is to 9, and that the poor die in larger proportion than those in comfortable homes (430 colored to 230 white are the numbers in the District for ten years) might be used as an argument that exposure to cold is an active agent in the production of catarrh.

The one great danger, a danger which stands out glaringly in the lurid picture of this disease is the feeble dilated heart and the venous congestion of the organs; and the general disturbance in the arterial and capillary as well as venous circulation.

The vomiting and inability to retain sufficient food is an added source of exhaustion, and to this must be attributed much of the asthenia and marasmus which characterise all bad cases and which are alone the cause of death in many. But here too the heart is made to suffer and an additional cause of heart exhaustion is found in the general inanition.

TREATMENT.

What are the data upon which a rational treatment of whooping cough is to be based?

1. That it is a specific disease, due to a micro-organism the action of which is local upon the mucous membrane of the naso-pharynx and upon the the terminal filaments of the nerves.

2. That it is primarily an acute disease, with a tendency to chronicity in its later stages.

3. That the special conditions which call for treatment are the feeble and dilated heart due to mechanical overstrain, and the resulting disturbed state of the circulation in the brain and lungs; cerebral congestion and pulmonary congestion with catarrh being the direct result of circulatory disturbance.

The first step is to recognise it as a specific contagious disease. Being a specific disease with a restricted area of activity and that within reach, the search for specifics has been a rational effort. and we can but welcome every addition to our knowledge made by experiments with antiseptic inhalations, sprays and lotions, designed to destroy microbic activity in the respiratory passages. It would lead me very far from my purpose to go into the history of this part of the subject, but I firmly believe that in the effort to cure the disease by internal and local specific remedies, important if not the most important indications of treatment have been overlooked and lives sacrificed which might have been saved. Niemeyer many years ago said that "the fact that in whooping cough we have to do with catarrh protects us against that hunt for specifics which is so useless and dangerous." Since this was written the development of antiseptic treatment has been very great, but it is none the less true now than then, that the immediate demands of the attack are forgotten and quite neglected. These immediate demands are the same that confront us in every acute specific disease, which has a limitation in time, and the progress of which can be influenced by prompt and proper care in the beginning; they are the acute nature of attack and the special condition of the heart and circulation.

Trousseau has dwelt upon the febrile feature of whooping cough as being diagnostic, and the study of the temperature in the early stages will show the more frequent incidence of fever than is seen in simple catarrh without the spasmodic element. The study of the temperature gives a test of the gravity of the case and is a means by which those catarrhal changes which are the forerunner of broncho-pneumonia can soonest be detected. In every case of whooping cough from its inception a daily record of temperature should be kept

Whether there is fever or not, the processes which are going on are acute, the characteristic cough soon begins and the heart commences to feel the effect of overstrain. If our specific methods of treatment could now abort the attack, or decidedly modify the character of the cough, the danger from heart strain would be obviated. But so far these methods have not reached a point of perfection and until this is done the principle of treatment should be to give to the heart all of the force we can by relieving it of unnecessary work.

Rest therefore becomes the cardinal doctrine of treatment—a doctrine which has not been recognised at all, and which I believe stands at the foundation of all successful management. Oppolzer, many years ago, advised the confinement of the patient to one room, and Niemeyer, writing in 1864, said that he had followed this advice ever since he knew of it, "with a rigorous exactitute and with the most favorable success" and that he could not sufficiently recommend it.

Niemeyer's suggestion was based upon the dangers of adding to the catarrh by exposure to the external air, but I believe that the idea has a much wider application, and that *keeping the child in one room and at rest in bed, if the paroxysms are at all frequent or severe, is the proper method of treatment in all cases.*

The definite method would be in the catarrhal first stage, if it is known or thought to be the onset of pertussis, to isolate the child absolutely from other children, to keep it as much at rest as possible and if there is any rise of temperature, to put it to bed. When the paroxysmal cough begins the patient if an infant should be treated as if it were already ill, not dressed, but wrapped in a blanket so as to be as equably warmed as if it were in bed; beyond infancy the child should be kept in bed if possible, if not possible in the arms, and cared for as if the worst symptoms were present. During the last winter I had under treatment a case of whooping cough in a child four years of age, who had chronic mitral insufficiency, and no worse condition could have been present; as soon as the "whoop" began the child was put to bed and kept there for three weeks with the result of making her attack much shorter and much less severe than that of her older sister, who was not kept in bed but in the room during the same period.

By such a method of treatment three things are accomplished:

1. Isolation of the patient, and the necessary reduction in the number of cases and deaths.

2. The diminution in the intensity of the specific process; this is not a necessary but a probable result.

3. The rest of the heart and the lessening of overstrain and dilatation.

4. The avoidance of the effects of cold in exaggerating the existing catarrh.

How long should isolation with rest in bed or confine ment in one room be continued? So long as the case demands it, so long as the paroxysmal cough by its severity or frequency is distinctly a source of danger; that is for three weeks or four weeks or longer. What matter is it how long, if by such isolation and rest you are reducing the general mortality of the disease and avoiding all risks in the particular case. But it is one of the beneficial effects of seclusion and rest in whooping cough that the stages are shortened so that the duration is reduced to six weeks or less. Neimeyer insisted upon this as a direct result of confinement to the house alone, and during many years of experience with this method, the average of the violent paroxysmal stage has not been more than two weeks, making the whole attack of about six weeks duration.

To what extent this isolation should be enforced under the supervision of the Health Authorities, I am not prepared to say. The practical difficulties in the way are very many, but I see no reason why regulations should not be made which would at least wake the community up to the dangers of the unlimited diffusion of the disease from the absence of any attempt at restriction.

This leads me to speak of the outdoor fresh air treatment of whooping cough—a treatment which I believe is based upon a tradition ingrained into our social organization, part and parcel of inherited, unscientific modes of thought, and entirely irrational. On general principles fresh air is antagonistic to germ life, and foul air favors its activity, but that in seeking fresh air we should put the patient to every risk of fatigue and cold, I believe to be entirely unscientific and lacking in common sense. There is no reason why free ventilation and fresh air should not be made an addition to the treatment by rest and seclusion, but the dangers of the propagation of the disease, the dangers of heart exhaustion and of cold are necessarily incurred in the outdoor treatment as at present practised.

The time comes in whooping cough sooner or later when the final stage has been reached, the more acute symptoms have subsided, the patient continues to cough spasmodically more or less frequently, there is but little change from week to week; it is possible that the belief that change of air is specific at this stage may be well founded, but I know of no facts from my own personal knowledge which assure me that it is so.

That the great majority of cases of whooping cough get well, that 2 to 15 per cent. only die is no reason why the rest treatment should not be employed in every instance. I have not attempted to illustrate the advantages of this method by citing cases which have demonstrated its utility, but, as the public conscience has not been raised to the point of regarding whooping cough as dangerous, and as the outdoor treatment has such firm hold upon its faith, the difficulties of enforcing complete isolation and rest have been very great.

In conclusion, the question of prevention must take precedence over every other. An infectious contagious disease can of course only be prevented by isolation. The seriousness of every infectious disease and the ability to control its spread by isolation determine the necessity and propriety of segregating patients. The seriousness, the great fatality of whooping cough has been shown, I think clearly shown; more fatal than measles, hardly less so than scarlet fever, it numbers its victims by thousands and involves incalculable suffering. There is every demand indeed, an imperative obligation upon us to meet this question if it be possible to meet it. We know that isolation alone will prevent its spread, and yet we make no effort to isolate it. Suppose that scarlet fever were half as fatal as it is now would we not be criminally responsible if we did not isolate our patients. And yet with whooping cough, the cause of more deaths than scarlet fever in this community, we permit these children to frequent the public thoroughfares, the theatres, the churches, and we only smile when a large audience is disturbed by the shrill whoop of the little sufferer. Imagine a child with diphtheria, measles, or scarlet fever carried about in public places; it would be a folly and a crime to permit it, and is it less a folly and a crime with thirty to one hundred deaths a year from whooping cough in this city.

An average of many authors fixes the death rate at 7.6 per cent. This means that about one thousand children are diffusing the poison of whooping cough in the streets and public squares of Washington during every year, and not only are they allowed to do it, but they are ordered by their physicians to do it, in pursuance of the out-of-door treatment.

In New York City over 6,000 children are allowed annually to disseminate the germs of the disease. In one month alone—August—in Washington there were 126 cases with nine deaths. Imagine these 126 children being permitted to sow the seeds during August which were to be reaped in the deaths of eight children in September, six in October, three in November, and four in December, a total of twenty-one children whose lives might have been saved if isolation had been practiced.

Or to make the figures more striking, imaginine 1,404 cases in the month of August in the city of New York infecting the hundreds of children who were to be ill in September, October, November and December, 148 of whom were to die miserable deaths, deaths preceded by weeks of agonized suffering.

If we were to relax discipline in the 500 to 1,000 cases of scarlet fever, or of measles which we have here every year we should justly consider ourselves culpable, and yet we deliberately expose the children of the city to decimation—nay we advise and encourage the dissemination of the disease.

know what the difficulties attendant upon the quarantining of a case of whooping cough are during the eight to twelve weeks of its weary travail, but if life is to be saved; if life is not deliberately to be put in jeopardy, we must attack this question and secure some improvement upon our present methods. It has been shown how rest and isolation may be made to harmonize and how in securing the best results in the individual cure, we are at the same time preventing the spread of the disease.

Particular care should be taken to secure the removal from the sphere of infectious influence of all children who are tubercular, rachitic, syphilitic or who have bronchial catarrh, all sick or debilitated children. But the quarantine should be as strict as that for measles or scarlet fever. Why should it be less so? If we will enquire into the reason for the difference which is made we will see that there is no scientific reason, but merely the rule of tradition and custom which influences us and no more, and we submit our science and our common sense to this.

The practical points of this paper—the only points which I have dwelt upon and the only points which I would like to drive home with as stunning a blow as I can give are that whooping cough is a dreadfully fatal disease—and a terrible cause of suffering even where it does not kill, that we, as physicians—health guardians of the families of our patients, are directly responsible, almost wholly responsible for these deaths, and that every obligation of science and knowledge, every call of duty summons us at once and forever to inaugurate a new era in its prevention and cure.

A Fatal Injection of Serum.—The *Gyogyaszat*, a medical paper published by Professor Joseph Korach, of Buda-Pesth, publishes the following interesting case showing that the antoxic serum is not innocuous as a preventive. A child, aged three, had slept in the same bed as her sister, who had diphtheria, and was successfully treated by the serum. The parents insisted that their child, having been in contact with her contaminated sister, should be rendered exempt by an injection of the serum. Accordingly 2 c.cm. of No. 1 Behring was injected. The next morning the child was depressed. On the following day she had fever and violent pain in the lumbar region. The urine contained a considerable quantity of albumen. Next day the temperature rose to 103° F., petechiæ appeared on the legs, and the day after the child died.—*Brit. Med. Journ.*, 1895, i., 505.

SOME PHYSIOLOGICAL FACTORS OF THE NEUROSES OF CHILDHOOD.

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(*Continued from page* 172.)

IV.

Exciting Causes of Fever and High Temperature in Infants and Children.

Having studied the peculiarities of the nervous mechanism which controls the body temperature of the infant and child, we will now inquire what are the causes, most likely to disturb this mechanism so as to produce an increase or decrease of body temperature. Or in other words we will ask what are the usual exciting causes for the high and variable temperatures which are so likely tooccur in infancy and childhood? These causes may be classed as follows:

1. Bacterial products.
2. Insolation.
3. Muscular action (convulsive.)
4. Mechanical and reflex causes.

1. **Bacterial Products** are by far the most important of the exciting causes of fever and high temperature in children. The variations in temperature accompanying the acute infections, including all forms of external and internal bacterial toxemias, are due to the action of bacterial products on the heat centres. Bacterial products capable of producing fever and variations in temperature may be formed by bacterial action either within the blood and tissues of the animal or outside the blood and tissues of the animal, in wounds, or in cavities, such as the intestinal canal, which communicate with the external air. But wherever these bacterial products may be formed the soluble ones are absorbed and produce fever and variable temperature by their direct action on the nervous centres. As a rule the soluble bacterial products which produce fever also produce increase of body temperature and the increase of temperature is often a valuable indication as to the severity of the fever process, but this is a rule which unfortunately has many exceptions as is shown by the subnormal temperature that occasionally attends

pneumonia, malaria, typhoid fever, influenza, scarlatina, and other acute infections. The subnormal temperature which occasionally occurs in these fevers has not been satisfactorily explained. Very recently Centanni investigated seventeen pathogenic species of bacteria and found in cultures of all of these germs a substance, not a peptone, which when injected into animals caused fever with the following symptoms, high temperature, prostration, emaciation, and finally death. Omitting further discussion I will say that the evidence justifies the conclusion that bacterial products excite fever by acting directly on the fever (1) centres and the variations in temperature that accompany fever are due to the action of bacterial poisons on the heat (2) centres.

Why do bacterial products produce fever and variable temperature so much more readily in children than they do in adults? This question has in part been answered by our previous study of the peculiarities of the heat mechanism in childhood.

(a) The thermogenic centres being more unstable and irritable in the child are more readily excited by bacterial products. Fever and increased temperature are therefore more easily produced.

(b) The thermo-inhibitory centres being immature and feeble in the child they exercise but a weak restraining influence over the discharge of force from the thermogenic centres which are being excited by bacterial products. For this reason fever and increased temperature are more easily produced by bacterial products in the child than in the adult.

(c) Still another possible reason why microbic poisons produce fever and increase of temperature more readily in the child than in the adult was suggested to me by Prof. Charles Richet in a personal communication. This explanation depends on the potency of the fever poison and not upon the peculiarities of the nervous mechanism. Richet asks: Is it not possible that the microbic fever producing toxins may be stronger or more toxic when they are produced in young organisms that are not protected by previous attacks of acute infections? That is to say that in infants and children who have not had previous microbic infection and who are not therefore protected against these diseases pathogenic microbes may develop more potent fever producing toxins than they can later in life.

(1-2.) The fever and heat centres are probably identical since experimental physiology has not been able to differentiate between them.

2. **Insolation** is an important cause of fever and high temperature in infancy and childhood. The best explanation of the fever of insolation is that the feeble inhibitory heat centres of the child are still further weakened by the heat so that practically no restraint is exercised over the heat producing centres. Cases of insolation in infancy and childhood are ordinarily classed as cholera infantum, or other forms of summer complaint, and this classification greatly obscures the direct etiological importance of heat in these cases. Forchheimer has for many years taught that many of the cases of so-called cholera infantum were cases of insolation, and that in such cases the intestinal fermentation is primarily a symptom rather than a cause of the disease.

3. **Convulsive Muscular Action** is not an infrequent cause of increased temperature in infants and children. The manifestation of muscular energy is always accompanied by the evolution of heat and the production of carbonic acid, and excessive muscular action such as occurs in general convulsions is always accompanied by increased production of heat. And this is a factor of the increased temperature that occurs in general spasms. But a portion of the increased body heat that occurs in this condition may be attributed to the increased friction of the muscles, tendons and articular surfaces which transform kinetic energy into heat. It should be remembered therefore that excessive muscular action may be a factor in producing increase of body heat and that this source of heat production is quite distinct from that which results from the normal metabolism constantly going on in the muscles, &c., at rest, and from the abnormal metabolism going on in the muscles, &c., during fever. I do not wish to convey the idea that increased muscular action is the most common or most important cause of the increased body temperature that occurs during muscular spasm, but only to impress the fact that violent muscular action is a factor in producing the increased body heat rather than that the increased body heat is a factor in producing the spasm.

When the spasm is purely reflex in origin the excessive muscular action is then no doubt the most important cause of the increased body heat, but when the spasm results from microbic poisons, as it usually does, then no doubt the increase of temperature is chiefly due to the action of these poisons on the heat centres. For these reasons one would expect to find the temperature during reflex spasm not so high as it is in spasm due to microbic infection.

4. **Mechanical and Reflex Causes** of fevers and the variable temperatures of infancy and childhood. In speaking of the heat centres I have already indicated how foreign bodies, growths, and exudations could act directly on the heat centres to disturb the body temperature, so that there now only remains the consideration of the reflex causes of variations in the body temperature of infants and children. Ott says "After the use of large doses of atropine I have seen the temperature rise greatly upon sciatic irritation." "It was also found that this increase of temperature was accompanied by an increased production and augmented dissipation of heat." In these experiments we have proof that not only high temperature but also fever may be produced reflexly.

Gall Stone fever which is classed by physiologists as a reflex fever has been studied by Wood, who found that in the "fever produced by gall stones, elevation of temperature did increase urea elimination." Here again is an instance of both fever and increased temperature from a purely reflex cause. It is my belief that variations in the body temperature in infancy and childhood are not infrequently of reflex origin, and that the intestinal canal and the genitalia are the sites where reflex irritation is most likely to produce this symptom. Increased temperature may occur in the infant and child from the cutting of a tooth, from worms, undigested food, and other foreign bodies in the intestinal canal. The irritating products of an intestinal fermentation may also produce increase of temperature unaided by the soluble bacterial poisons previously spoken of. It is a matter of every day experience with clinicians that the removal of such simple causes as are here narrated will oftimes cause the temperature of the sick child to fall to normal and all the other symptoms of fever to disappear. It will be well therefore, in these days when chemistry and bacteriology are dominating medical pathology, for us to remember that a purely reflex fever can and does sometimes occur during infancy and childhood.

V.

Heat Dissipating Mechanism.

In the previous chapter the consideration of the heat dissipating mechanisms was purposely omitted because it was thought that certain clinical phenomena dependent on the peculiarities of this mechanism during infancy and childhood could best be studied in a separate chapter.

The heat dissipating mechanism is the mechanism by which we keep ourselves cool. This may be done in three ways.

(1) By radiation and conduction of heat from the surface of body.

(2) By constant evaporation of water from the surface of body.

(3) By evaporation of water from the air passages.

Dissipation of heat by radiation from the surface of the body is by far the most important means of heat-dissipation. In this process the vaso-motor nervous mechanism is all important. When unusual heat loss is demanded the vaso-motor nerves dilate the blood vessels of the skin and in this way expose more blood to the lower temperature ot the air.

Loss of heat by evaporation is dependent on the activity of the sweat glands which are controlled by sudoriparous nerves and sweat centres. When unusual heat loss is demanded these centres respond by increasing the activity of the sweat centres which cover the surface of the body with fluid and the temperature is lowered by its evaporation. Both the dominating vasomotor and sweat centres are located in the medulla oblongata and have reached good functional development at birth. But in the infant and child they respond more readily and energetically to the demands for heat reduction than they do in the adult.

It must also be kept in mind that heat loss from both radiation and evaporation is greater in the infant than in the adult because its area of surface is greater in proportion to its body weight, the infant has in fact a three-fold greater radiation. These are the reasons therefore why the high temperatures of infancy and childhood are so readily reduced by the heat dissipating mechanisms. The increased activity of the heat dissipating mechanism acting on a proportionately larger surface compensates for the increased activity of the thermogenic centres. In the play of function between the heat generating centres and the heat dissipating centres we have an explanation of the rapid variations of temperature so characteristic of the fevers of infancy and childhood.

Evaporation of water from the air passages is a means of heat dissipation which we have yet to consider. And it is the special purpose of this chapter to study this function in its relation to clinical phenomena.

In certain animals, the dog for instance, who do not sweat, the evaporation of water from the air passages is the chief means of reducing the body temperature. Richet calls the rapid respirations of the panting dog *Polypnœa*. By these rapid respirations, amounting to as many as 400 in a minute, the heat of the body is rapidly given off. Richet located the polypnœic centre in the medulla oblongata. Ott later located it in the tuber cinerium. Richet proved that the polypnœic centre was not affected by the amount of carbonic acid or oxygen in the blood and that it was solely for the purpose of heat dissipation.

In answer to the question, How is the polypnœic centre excited to activity, we have the experiments of Sihler demonstrating that increased respiration of an animal exposed to heat is due to two causes, warmed blood and stimulation of the skin by the heat, and that skin stimulation is the more important factor. Gad and Mertschinsky also demonstrated that increased temperature of the blood stimulates the respiratory centres and causes an increased number of respirations, and Ott produced polypnœa by electrical stimulation of the tuber cinerium.

Does the polypnœic centre exist and is it functionally active in infancy and childhood? The answer to this question has most important clinical bearings. Ott says "In infants we see a polypnœa during fever, the respiration rises in frequency with the rise in temperature." Every physician must have seen many cases of rapid respiration in children that could not be accounted for by pulmonary disease. It not infrequently happens that a child with fever will have 60, 80 and 100 respirations per minute, without presenting any sign or symptom of lung trouble. Polypnœa is to my mind the only explanation of this phenomenon. Very rapid breathing is a common symptom of summer complaint, and in many cases means nothing more than nature's attempts at heat dissipation. The importance of recognizing polypnœa as a symptom of fever in infancy and childhood, is very great. If we do not do this we may often be led by the rapid breathing away from the real cause of the disease. Fortunately for us as clinicians there is a marked difference between the character of the polypnœic breathing and the rapid respirations due to lung or heart disease. In polypnœa the breathing is regular, easy and rapid, but is not as it is in lung and heart disease irregular, labored, and accompanied by cyanosis.

(*To be continued.*)

Clinical Memoranda.

CLINICAL MEMORANDA FROM THE EVELINA HOSPITAL FOR SICK CHILDREN.

BY GEORGE CARPENTER, M.D., (London).

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Sarcoma of the Dura Mater in an Infant.

Ethel Paris, æt. four months, was admitted on November 12, 1888, whilst I was Resident Medical Officer at the Evelina Hospital, under Dr. Goodhart. Three weeks before admission she had a "twitching," lasting two hours, on the right side of the body. Since, she had been subject to fits daily. Head enlarging fourteen days and the child sweats very freely about it.

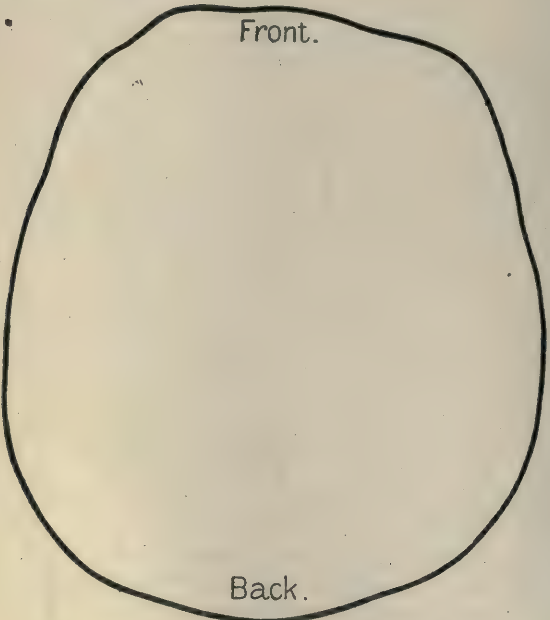


Fig. 1.

On Examination.—The head is large. The fontanelles are widely open and the separation extends to the root of the nose in front. All the sutures are separated and fluctuation can be obtained at the fontanelles. The head feels hot and the superficial veins are distended. A cyrtometric tracing of the head taken in December, showed asymmetry, the left side being the distinctly larger half. The tape measurements were horizontally eighteen and a half inches and from ear root to ear root transversely eleven inches. *Heart* normal. *Lungs* resonant—a few râles. No enlargement of liver or spleen. Pupils dilated. No squinting. Double optic neuritis. Neither paralysis nor rigidity of extremities. *Pulse* 100. *Respiration* 40. *Temperature* 97° F.

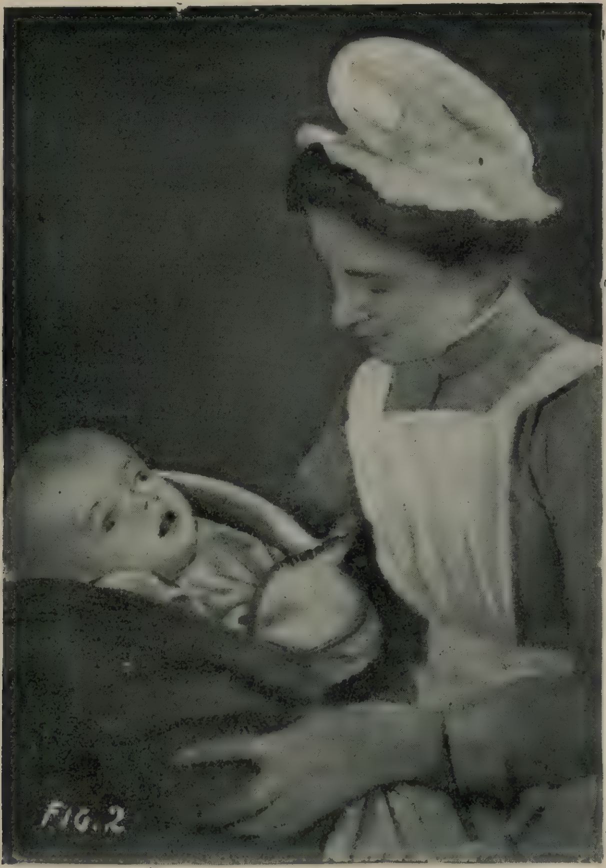


FIG. 2

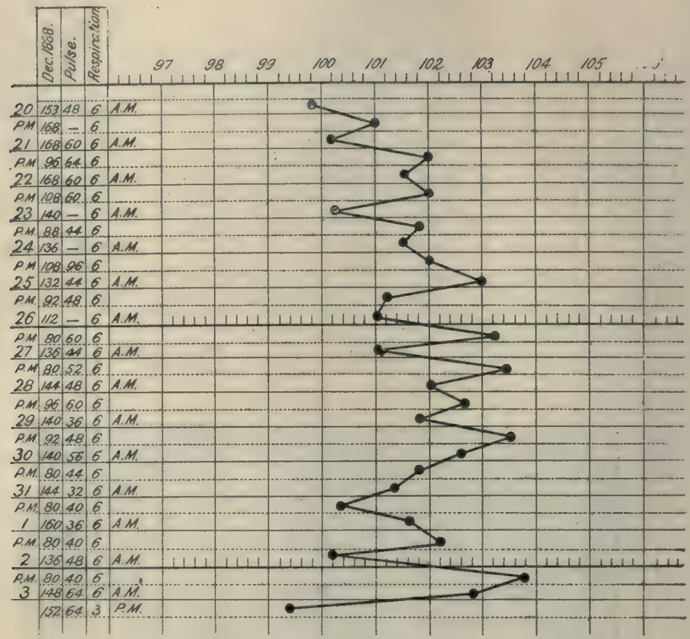


Fig. 3.

Nov. 18th.—Towards noon the child became convulsed. Both legs equally rigid and crossed over one another. Right arm more rigid than the left. Mouth twitching and drawn towards the right side. Slightly convulsed several times during the afternoon.

Nov. 19th.—Slept very little. Convulsed at times during the night. Right side of face drawn and mouth twitching. Arms and legs rigid.

Nov. 20th.—Face twitching during the night.

Nov. 21st.—Mouth drawn to the right side and twitching several times. No rigidity of limbs. Drowsy.

Nov. 22d.—At night right side of face drawn and right eye closed. Arms rigid. Convulsed this evening. Limbs rigid. Left side of face twitching.

Nov. 23d.—The skull is increasing in size and the bones are more widely separated. It was proposed to draw off some of the fluid. A small trocar was inserted through the anterior fontanelle. No fluid. Another attempt was made through the coronal suture with the same result. The case was then thought to be one of hypertrophy of the brain.

Nov. 28th.—Right arm rigid during the day.

Nov. 29th.—Right arm rigid at times during the night and day.

Nov. 30th.—Both arms rigid. Face twitching several times. Mouth drawn towards the right side.

Dec. 1st.—During the night face drawn and mouth twitching. Right arm rigid and convulsed at times. In the day right arm rigid and mouth drawn towards the right side.

Dec. 2d.—Convulsed at intervals during the night. No rigidities.

Dec. 3d.—Convulsed at intervals during the day and night. Left arm and fingers rigid at night.

Dec. 4th.—Convulsed at times during the night. Mouth very much drawn and in the day mouth twitching and the right arm rigid.

Dec. 5th.—Convulsed during the night but not during the day.

Dec. 6th.—Slightly convulsed during the night.

Dec. 7th.—Face drawn. Right arm rigid.

Dec. 9th.—Convulsed once during the night. Face drawn twice during the day. No rigidity.

Dec. 10th.—Convulsed at times during the night. Face drawn on the right side several times. Right arm rigid during the day.

Dec. 11th.—Slept well. More convulsed than usual. Right arm rigid. In the day face slightly drawn on the right side twice. Right arm very rigid.

Dec. 12th.—Convulsed during the night.

Dec. 16th.—Right arm rigid at times during the night.

Dec. 17th.—Right arm rigid this evening.

Dec. 20th.—Face drawn on the right side.

Dec. 22d.—Both arms rigid at times during the night.

Dec. 26th.—Very convulsed during the day. Respiration 112. Profuse sweating on head and face.

Dec. 27th.—Right arm rigid.

Dec. 28th.—Convulsed during the night. Mouth twitching, and drawn very much towards the left side. Right arm and leg rigid. Breathing very rapid, 96 to the minute.

Dec. 29th.—Very convulsed. Both arms rigid.

Dec. 30th.—Convulsed during the night. Both arms rigid in the morning.

Dec. 31st.—Convulsed at times during the night. Both arms and legs rigid in the morning.

Jan. 1st.—Slightly convulsed at night. Both arms and legs very rigid twice during the day.

Jan. 2d.—During the night mouth drawn to the left side. Arms and legs rigid. During the day arms and legs very rigid several times. Mouth drawn sometimes to the right side and sometimes to the left. General convulsions.

Jan. 3d.—Very much convulsed during the night. Great difficulty in swallowing during the night and day. Convulsed generally and died at 5:55 P.M.

Whilst under observation she suffered from looseness of the bowels and more or less sickness. Her temperature was but once above 99° F. until November 20th. After then until the 25th it was above 99° F. Then it rose and was usually about 100° F. subsequently rising to 101° F. or a point or two over until the 7th of December when it again fell and remained under 99° F. until the 12th. After this it rose to a little over 99° F. and from the 25th a record is given of the temperature together with the pulse and respirations. She occasionally suffered from cough and wheezing breathing but this was not noticed towards the end. At the autopsy a sarcoma was found about the size of the closed fist arising from the dura mater on the left side and involving the left hemisphere of the brain. There were secondary growths in the lower lobes of both lungs.

Tubercular Kidney in an Infant.

Eliz. McKew, æt. one year nine months, was brought to my out-patients on March the 20th, 1890, for "wasting and a bad cough."

She was weaned at ten months and since fed on the same food as the family. She suffers from diarrhœa. No syphilitic history.

She is said to pass a "lot of water." This is thick and has a deposit which is "white like milk." This condition has been since she was ten months old, since when she has fallen away and wasted. She is very thirsty and takes a lot of milk and has a slight cough.

On examination.—A very pale child with a sallow complexion. She appears to be dull and ill and is very much wasted. She has molluscum contagiosum all over the face.

Heart.—Impulse $^3/_4$ inch external to the nipple line and in the fifth space.

There is a large globular firm tumor to be felt, occupying the left side of the abdomen and reaching to the left iliac fossa. Measured transversely it is three inches from the umbilicus. The spleen can be felt lying over it —a little enlarged. On rectal examination the globular rounded smooth end of this tumor can be felt in the iliac fossa. By bimanual palpation there is a deep sense of fluctuation, as though of some tight cyst. The whole surface is smooth. No notch or excrescence can be detected. No enlargement of the ureter or a calculus can be made out. The abdominal glands are not enlarged. Upwards the tumor disappears under the left costal margin. Traced backwards it seems to fill the lumbar region as far as the spinal column. The chest on the left side is dull in front from the second rib downwards and behind from the lower angle of the scapula. Over the dull area the breath sounds tubular. No râles. Over the usual portion of the chest the air enters well and there are no adventitious sounds.

The liver was felt one finger's breadth below the costal margin on the nipple line. The anterior fontanelle admitted three finger tips.

Pulse 106. *Respirations* 48. *Temperature* 97° F.

She had diarrhœa and did not live long. The parents declined to allow an examination. However, the case was one of interest and I endeavored to remove the diseased organ from the body via the anus and after much trouble succeeded.

The pelvis of the kidney was very dilated and filled with pus. The left ureter was blocked by a phosphatic calculus the size of a small marble just below the pelvis. The calices were much dilated and filled with pus. There were numerous tubercular abscesses in the kidney substance. Tubercle bacilli were demonstrated in them.

A Case of Gangrenous Impetigo Contagiosa.—Tuberculosis of the Lungs.

Joseph J——, æt. sixteen months, was brought on March 5, 1894, for an eruption. This commenced three weeks previously at the corners of the mouth as "little white blisters." The child is said to have been quite well before. No running at the eyes or nose. No other children affected. No history of varicella.

This subsequently spread under the chin and then to the back of the head and neck. From the history it appears that the blisters burst and leave shallow ulcers which enlarge, leaving a dry unhealthy base and inflamed margins.

On examination.—The angles of the mouth were ulcerated. The left ulcer showed a central slough with an inflamed margin. On the lower lip to the left were some crusts. Above the left angle of the mouth on the cheek were two isolated sloughs the size of No. 1 shot nearly, with inflamed edges. At the back of the neck were three lesions. A central one with a dry glazed base, half an inch by three-eighths of an inch. Above and to the right of this a black slough and the same to the left of it—these were nearly a quarter of an inch in diameter.

There was one black slough with inflamed edges on the outer side of the right leg just above the ankle.

Temperature 98° F. At the time I expressed an opinion to my clinical assistants that the case resembled one of varicella gangrenosa in so far as the gangrene was concerned, and that being so it was possible that the child was suffering from tuberculosis.

At the time the statement was received with some incredulity as the child looked well enough; indeed, they did not think fit to examine the organs for there are no notes respecting these.

The history was quite against varicella and the lesions were much more suggestive of Impetigo Contagiosa and I have accordingly headed this communication as above. The sloughs were puzzling to me as I had not seen a case of this disease with this complication before. It however occurred to my mind that it was possible that such a complication might portend the presence of general tuberculosis and I so expressed myself for if the toxin of tubercle can produce gangrene in varicella there is no valid reason why it should not alter the character of the inflammation in pus inoculations.

The parents attended again on March the 12th with the statement that the child seemed to be getting on better, but died quite suddenly at 9:30 P. M. on the 11th. An autopsy was asked for and granted. The lower half of the left lung was found to be solid and slightly granular on section. In the upper half were numerous patches of caseous tubercle, some measuring about one-third of an inch in diameter. The right lung showed patches of broncho-pneumonia and several tubercles were plainly visible on the surface of the lung. The posterior part of the lung was the most affected. The other organs were healthy.

Uncommon Cases of Psoriasis in Children.

Case I.—*Psoriasis Rupioides.*

Alice Hutchins, æt. two years seven months, was brought on January 23, 1893, with Psoriasis of six weeks' duration. Neither phthisis nor psoriasis in the family. She did not walk until twenty-one months old and she had genu varum, beaded ribs, and rickety bone ends. The eruption was for the most part on the trunk. The skin below the knee caps and the points of the elbows were free. The limbs were not so freely attacked as the trunk. The hands, feet and nails were free. There were a few spots on the face and head. The eruption on the whole selected the extensor aspect but not markedly so. On the front of the chest was a large confluent copper-looking area raised above the skin with a red and scaly serpiginous edge. The scales were much heaped up and shell-like—this was very marked on the arms and back. Some of the scales were yellowish in color.

Psoriasis rarely occurs in childhood before the third year. The early onset in this case is therefore unusual as also the limpet-shell arrangement of the scales. When the disease commences early heredity is usually marked, but it was not so in this case.

The eruption was extensive and the trunk was attacked in excess of that on the limbs. The absence of attachment of the knees and elbows is not infrequent in childhood. There was no syphilitic history or suspicion of syphilis.

Case II.—*Implication of the Soles of the Feet.*

Bernard Gadsdon, æt. five years, attended on February 16, 1891, with psoriasis of two months' duration. No other children with a similar eruption or any member of the family. No history of syphilis or suggestion of such from a physical examination. The eruption was situated as follows: The trunk with the exception of a small scaly papule on the left scapula was free—there were two or three scaly papules on the sacral region. A few small papules seen on the face, none in the hair. On the backs of the arms and forearms, the former chiefly, were some affected areas varying in size from a split pea to a sixpenny piece. The elbows showed larger patches than the latter. A few scaly papules were found on the backs of the hands. The palms and nails were free. On the legs there was one patch on the right thigh and two on the left; a few patches below the knee caps, the right being more marked than the left. The eruption was rosy and scaly, the scales being a trifle yellowish in color. The dorsal aspect of the left toes showed psoriasis papules on every one. On the sole stretching from the roots of all the toes with the exception of the big toe was a triangular area which involved the upper third of the foot the roots of the toes being the base and the outer aspect of the sole one side. The eruption was scaly and rather pink in color. There were also two very distinct small scaly papules on the inner aspect of the sole of the foot about the middle. The right foot presented much the same appearance.

The attachment of the feet is noteworthy and is very rare. Some observers indeed have denied that psoriasis affects the soles and palms and look upon that involvement as a syphilitic manifestation. In this case the rosy character of the eruption, the selection of extensor surfaces, and the involvement of the knees and elbows apart from the history point to the true nature of the disease. Yellowish scales are not infrequently met with in children. By some observers they are thought to occur in strumous subjects.

In the following case the palms of the hands were slightly affected.

Case III.—*Implication of the Palms of the Hands.*

Maud Beach, æt. seven years, was brought on December 11, 1893, for an eruption, causing much irritation, which dated two months. No history of phthisis or heredity. Father occasionally "gouty."

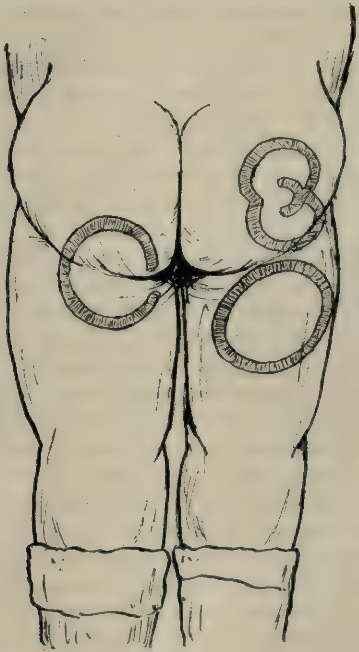
On examination.—There was a psoriasis eruption mostly on the arms and legs and in situation chiefly extensor. A few psoriasis papules were seen on the back and a few on the abdomen. The lesions varied in size from a pin's head to a half-penny piece, the latter occurred on the front of the legs. The scales were slightly yellowish in color.

On the forearms the skin was very much thickened. The eruption was more uniformly distributed over the extensor surface was redder and less scaly. It was also fairly-well marked on the flexor surfaces here. It extended slightly on to the palms of the hands but not on to the soles of the feet.

Rare Annular Congenital Syphilide in a Child of Fifteen Months.

Charles L——, æt. fifteen months, was brought to the Evelina Hospital on the 16th of March, 1891, with the following history:

Four or five months back his mother first noticed a few spots on the buttocks, also on the upper part of the right arm, for which she obtained some ointment. The spots on the arm quite went away but those on the bottom became ringed, and the rings have continually enlarged up to the present time.



On enquiry it was found that the child had snuffles and a rash on its bottom when six weeks old, and was treated at the Pimlico Hospital for three months with ointment and grey powders. The mother had three miscarriages in succession before the birth of the patient. In all she had borne fourteen children.

On examination.—The eruption is arranged as follows: On the left buttock and adjoining thigh is an almost complete ring two inches in diameter. On the right buttock two rings have coalesced in the shape of a bow. This measures one and three-quarter inches in its longest diameter and one and one-quarter inches in its shortest. At the back of the right thigh, adjoining the gluteal fold, is an oval ring measuring one and three-quarter inches by one and one-eighth inches. The eruption is raw-ham colored while the surface enclosed is perfectly healthy and shows no trace of scarring. The rim is scaly, raised above the surface, is transversely striated, and measures one-quarter of an inch in breadth. A careful microscopical examination was made of scrapings from the scales but not a trace of fungus could be found.

Pulv. Hyd. *c.* Sacch. gr. iv. t.i.d. (Hyd. *c.* creta gr. i.) were ordered and no local treatment was adopted.

March 23. Eruption greatly improved, more copper-colored, and not so raised.

April 6. Faint slight staining alone visible now. When the finger is passed over the edges these are felt to be still slightly raised. He is now troubled with lichen urticatus.

April 20. Left buttock quite free. The eruption on the right buttock is *just* visible. Rapidly gaining flesh.

Nothing further worthy of note occurred.

I showed this case at the Hunterian Society with the above diagnosis. It created some divergence of opinion. Dr. Stephen Mackenzie thought the eruption was probably tinea circinata, as he said that he then had a somewhat similar case due to this cause. My own view is, formed on past experience, that the ringworm fungus had nothing whatever to do with the condition, and in this opinion I was strongly supported by Dr. Colcott Fox who at once recognized the eruption as a rare syphilide.

Such an eruption is extremely uncommon, but I have seen at least two other cases with a similar skin affection who at once yielded—as this one did—to anti-syphilitic remedies.

I think the margin is extremely characteristic, being broad, raised, scaly, copper-colored and transversely striated. It is this, and especially the transverse striation, which make it to my mind so unmistakable. Indeed, in all these characteristics with the exception of scaliness it is very unlike tinea circinata.

The demonstrated absence of the fungus is not of great assistance as in undoubted cases of tinea circinata we may be unable to detect it. On the other hand its microscopical demonstration would have at once determined the nature of the disease. It must be remembered that tinea circinata sometimes disappears spontaneously.

ANTI-TOXIN IN SCARLET FEVER.

BY W. THORNTON PARKER, M.D.

Groveland, Mass.

In the *British Medical Journal* of April 12, 1882, I called attention to the relation existing between scarlatina and diphtheria. Since then, in one or two American journals I have contributed articles on unity in disease. Briefly stated, I believe that scarlatina and diphtheria are so closely related that the anti-toxin treatment will be found of equal value in both in affording immunity. In my translation of a paper by Dr. Ludwig Stumpf of Munich, in the December number, 1884, of the *Deut. Arch. Klin. Med.*, attention is called to the fact that the value of a remedy in the treatment of diphtheria is to be estimated by its disinfecting properties, or in other words, in its bactericide action.

This is in accordance with the theories of Dr. Griffith of England, on the unity of poison. Dr. Griffith refers in his admirable paper to the series of evolutions—symptoms—resulting from the post-mortem wounds received while dissecting the bodies of those who have died from peritonitis. He says: "One will die rapidly, say in twenty-four or forty-eight hours, from acute blood-poisoning; another will have multiple abscesses; another abscesses and pneumonia, or pleuro-pneumonia; another the same, plus meningitis, or, even in addition, kidney or liver mischief in more or less acute stages; another all the preceding, plus pericardiac and cardiac mischief; another in whom a tendency to phthisis exists, will fall into true tubercular consumption, the multiple abscess stage preceding it or not, in the course of evolution and development of the materies morbi; another will die, not from tubercular phthisis (true consumption of the lungs) but from 'galloping consumption,' *i.e.*, what I call septicæmic pneumonia, in which the lung runs rapidly through the stages of pneumonia, is disintegrated and expectorated."

A recent article in the *N. Y. Medical Times* concerning anti-toxin in the treatment of small pox, contains a valuable paper by Dr. Kinyoun. His conclusions are that "it does have a modifying effect upon the disease especially upon the eruption," and furthermore "since it appears possible to mitigate the attack of variola, it also appears rational to presume that the serum would have power to render susceptible persons refractory to the disease."

Referring once more to Dr. Griffith's theory, that scarlet fever, diphtheria, erysipelas, puerperal and typhoid fevers, certain forms of diarrhœa and allied ailments, pneumonia, pleuro-pneumonia, and many other affections heretofore usually considered as separate and entirely distinct diseases, are traceable to putridity. This theory of an "intoxicatious disease" is one held by many master minds. If then such a theory is tenable, why will not anti-toxin prove of value in many other diseases besides diphtheria?

I have so frequently in my practice had cases of scarlet fever and diphtheria in the same house; the scarlet fever developing after the diphtheria, not in the same patient, of course. I have had patients who have been exposed to patients suffering from diphtheria, develop scarlatina, and I believe that generally speaking the treatment, with the exception of local applications in diphtheria, is practically identical. I have as yet been unable to carry out any experiments in this direction. I am convinced that anti-toxin is of great value as far as diphtheria is concerned, and I am strongly inclined to believe that it will be found equally valuable in affording immunity in scarlatina.

An Anti-cigarette League, representing twenty-five thousand public-school boys in this city, has been organized.—*Med. Rec., N. Y.*, 1895, xlvii., 307.

Dr. Armand Ruffer has tendered his resignation of the post of Director of the British Institute of Preventive Medicine.—*Brit. Med. Journ.*, 1895, i., 492.

Fatal Poisoning by Quassia.—Venn (*University Medical Magazine*, vol. vii., No. 4, p. 304) has reported the case of a child fatally poisoned by a rectal injection of a decoction of two ounces of quassia in about a pint of water, made for the relief of seat-worms. From five to ten minutes after the injection the child became livid, vomiting took place, the muscles became relaxed, and respiration labored and shallow and the pulse imperceptible. Death took place within a few minutes.—*Med. News*, 1895, lxvi., 157.

THREE SUCCESSIVE CASES OF LARYNGEAL DIPHTHERIA SUCCESSFULLY TREATED WITH ANTITOXIN, INTUBATION AND MERCURY.

BY A. BROTHERS, M.D.

New York.

Although a sceptic regarding the value of antitoxin injections in diphtheria I decided to try the remedy in several successive cases of progressive laryngeal diphtheria in which stenosis was sufficiently advanced to necessitate intubation. The report, therefore, of three bad cases cured in rapid succession to my mind much better represents the value of this new curative method than a hundred mixed cases. In all of the cases the diagnosis was made on clinical grounds supplemented by bacteriological examinations. These examinations as well as the injections—with one exception—were made by physicians connected with the New York Board of Health. In all of the cases tonsillar diphtheria preceded, by several days, the involvement of the larynx and, therefore, the injections were not made at the outset of the disease.

Case I. Boy $3^1/_2$ years old under the care of Dr. Douglas. Sick with diphtheritic tonsillitis for three days. Then laryngeal symptoms developed for which bichloride of mercury gr. $^1/_{48}$ every hour was given. After thirty-six hours stenosis of the larynx was so marked as to necessitate intubation (Jan. 20). The following day (Jan. 21) a temperature of $101^1/_2$° with respiration of 36 per minute appeared for the first time and physical examination revealed consolidation of the right upper lobe due to improper feeding. An injection of antitoxin was now made (25c.c. Board of Health preparation) and calomel fumigations alone were resorted to. In the evening the temperature rose to $102^1/_2$°. Next day (Jan. 22) temperature spontaneously fell to 100°F. Urine contained 10 per cent. albumen. Half the quantity of serum was again injected. From this time the child improved from day to day and on Jan. 26th he coughed the tube out. The albumen disappeared from the urine and the boy was discharged cured.

Case II. Girl 22 months old. For three days I treated the child with chlorate of potash and iron for a double tonsillar diphtheria involving also the uvula. On Jan. 24th the membrane on the tonsils was clearing away nicely, but the child became hoarse and coughed croupy. Ordered bichloride of mercury gr. $^1/_{48}$ every hour and calomel fumigations (gr. x) every three hours. Next day (Jan. 25) temp. 100°F., respiration 24, pulse 100. Child refuses nourishment, has a septic appearance, heart action is irregular, and stenosis of the larynx is marked. At 6 P.M., on the advice of Prof. A. Jacobi, I intubated this child and 10 c.c. of the Board of Health antitoxin was injected by one of the representatives of the bureau. On Jan. 26th temp. 100$^1/_2$°, respirations 40, pulse 140 but regular. In the evening temperature 102°. Another antitoxin injection was made. From this time on the child improved and coughed the tube out during the night of Jan. 30th. This child's urine was loaded with albumen but it cleared up. Feb'y 6th the child was noted as entirely well.

Case III. Female infant, seven months old. The baby's brother is sick with naso-pharyngeal diphtheria of a most septic nature but is apparently improving under an irregularly employed method of antitoxin injections * combined with the usual disinfectant measures locally applied. The baby was sent from home for several days but was returned sick. Diphtheritic patches were present on both tonsils and Loeffler bacilli were found on making a culture. On Feby. 2nd I saw the child first and put it on the usual chlorate of potash and iron treatment. On Feb'y 3d child was hoarse and bichloride of mercury gr. $^1/_{120}$ every hour was added. On Feb'y 4th temperature 101°F., pulse 132, respiration 52. Antitoxin injection by one of the gentlemen from the Board of Health. Breathing so bad that, with the assistance of Dr. M. Cisin, I introduced a one-year tube. Next day (Feb'y 5th) prognosis very gloomy. Temperature 103°F., pulse 150, respiration 70. Another antitoxin injection made and a few doses of antipyrin given. Feb'y 6th, to my surprise,

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* This older child subsequently succumbed to nephritis and pneumonia.

Since writing the above I have treated a fourth case of diphtheria of the larynx with antitoxin (Behring), intubation and mercury in a child of seven years through the courtesy of Dr. H. Levin. The child made a complete recovery within a week.

temperature normal, pulse 120 and respiration 30. From this time until Feb'y 9th, when I removed the tube, the child made an uneventful recovery.

From these cases I believe we are justified in hoping much from this new remedy. Whether it will render unnecessary the use of mercury or intubation of the larynx are questions for the future to decide. For the present I believe that the three measures should be employed together in every case of bad laryngeal diphtheria.

Artificial Foods and Infant Mortality.—Statistics from the lists of registered deaths in England compiled by Dr. Hugh R. Jones (*Brit. Med. Jour.*) show that 42 per cent. of infant deaths may be referred to digestive disorders. Infant mortality in Norway and Sweden, where almost every child is nursed by its own mother, is but 10 per cent. In Wurtemburg the mortality of breast-fed children is 13.5 per cent., of artificially fed children, 42.7 per cent. In Munich, respectively 15 and 85 per cent. In lower Bavaria, where maternal nursing is the exception, the mortality is 50 per cent. Dr. Hope, Medical Officer of Health of Liverpool, investigated the methods of feeding in 718 fatal cases of diarrhœa in children. Of these but thirty were breast fed; 391 were reared wholly on artificial food, while 297 were partly nursed and partly fed on artificial food. Those wholly nursed fare the best, and those partly nursed are better off than those wholly fed on artificial foods. It is clear that maternal nursing should be encouraged, and early weaning and the substitution of artificial foods for the breast-milk should be discouraged; but the tendency is the opposite in all classes of society—a tendency which is increased by the increasing employment of women in industrial and commercial occupations.—*Journ. Am. Med. Assoc.*, 1895, xxiv., 219.

Ethyl Bromid Anæsthesia.—Dr. George Morgenthau advises its use in operations for the removal of post-nasal adenoid growths. It is given on a chloroform mask, using for children a half drachm. The anæsthesia lasts about two minutes. Its use is contra-indicated in chronic heart and lung disease.—*Journ. Am. Med. Assoc.*, 1895, xxiv., 349

A CASE OF CROUPOUS GASTRITIS.

BY JOHN THOMSON, M.D., F. R. C. P. ED.

Lecturer on Diseases of Children, School of Medicine, Edinburgh.

The formation of a false membrane on the lining of the stomach is a rare occurrence in childhood; and it is even rarer to have such a membrane vomited up during life. The following case seems therefore worthy of being briefly recorded.

Clinical History.—The patient was a very delicate little boy aged sixteen months, who had been brought up on the bottle and was rickety. His mother thought him so liable to suffer from chills that she had kept him in the house continually for five months before the illness from which he died. When I first saw him on Feb. 25th with my friend Dr. T. D. Wilson he was very ill with symptoms of acute pulmonary tuberculosis. His illness had begun on Feb. 12th with wheezing and loss of appetite. On the 15th, Dr. Wilson examined him and found signs of bronchitis but no rise of temperature. By the 19th, the temperature had risen to 103° and there was evidence of consolidation of the left base. From the 19th to the 25th Feb., he had gradually become worse.

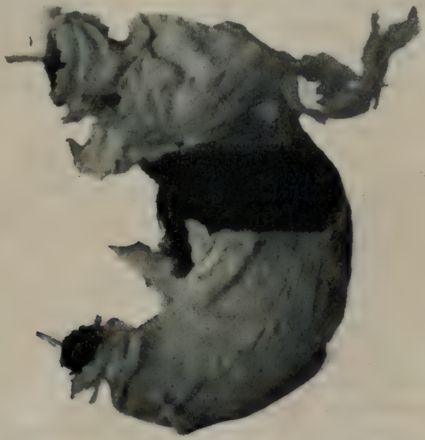
On the morning of the 23d Feb., he had a severe fit of coughing, at the end of which he brought up a quantity of mucus and among it what seems to have been false membrane, but it was not examined. On the 24th he vomited more of the same sort of membrane, and it was kept for examination. His mother thought that she saw similar membrane passed with his motions on the 24th and 25th.

The membrane vomited on Feb. 24th was floated out in water and was found to be composed of two large portions and a few very small fragments. One of the large pieces, which was tolerably thick and tough, was in the form of a long, slightly curved funnel and was evidently a cast of the pylorus and the adjacent end of the stomach. The other was more delicate and was somewhat ragged; it showed an opening at one part, evidently corresponding to the cardiac orifice and a rounded expanse which must have fitted into the large cul-de-sac of the stomach.

These two pieces were stuffed with black wool, suspended in spirit, and photographed as seen in the accompanying Plate, in which they are figured two-thirds the natural size.

Dr. G. Lovell Gullaud kindly stained and examined sections of the false membrane for me; and he reports as follows: "It consists entirely of leucocytes held together by a small amount of fibrin. There is no evidence of the presence of any epithelial elements at all. There are possibly a few cocci which are generally contained in the leucocytes, but the numbers of organisms must be very small. There is no evidence of the presence of tubercle or diphtheria bacilli."

The mother did not notice any sign of discomfort or pain before the membrane was brought up; and the child was not known to have swallowed anything but a little brandy and water and a simple cough mixture. There were no other symptoms pointing to gastric derangement either before or after. There were also no enlarged cervical glands, no pain or swelling of the throat and no false membrane there at any time during the illness. There was no case of diphtheria in the neighborhood at the time so far as was known.



After the 24th, no more membrane was vomited; the child became gradually weaker and more cyanosed, and he died on March 1st at 5 A.M.

The *Post-Mortem Examination* took place on the evening of March 1st. The main lesions found were—advanced tubercular broncho-pneumonia, pleurisy, enlargement of bronchial glands, fatty liver, tubercle of spleen and numerous large caseating glands in the mesentery.

The stomach was normal in size; its mucous membrane was much congested but there was no trace of false membrane upon it. On microscopic examination it appeared unusually vascular but not abnormal in other respects. The œsophagus and intestines were normal in appearance and contained no false membrane.

Remarks.—Croupous gastritis is almost always a secondary condition; and, when not due to diphtheritic membrane spreading into the stomach, it is found in feeble individuals whose vitality has been very seriously lowered by exhausting disease. In several of the cases previously reported tubercle in some form was the primary ailment. It seems as if the primary disease acts by reducing the child's resisting powers to such an extent that the direct cause—which may be either pathogenic organisms or the products of fermentation of the stomach contents—is able to produce this peculiar effect. (See an interesting paper by Dr. Martha Wollstein in the ARCHIVES OF PEDIATRICS, 1892, p. 489).

A New Hospital for Contagious Diseases at Brookline, Mass.—A hospital for contagious diseases has been built by the Brookline Board of Health at an expense of $5,000. The hospital stands on high ground, and has plenty of open space about it. The buildings are of wood, single-story, pavilion style, each having three small wards, with a hallway through the middle of the building, a kitchen, cellar and attic, and can together accommodate from twenty-five to thirty patients and attendants. The walls are plastered with Windsor cement, to permit of easy and thorough cleansing, and all the rooms, except the kitchen have open fireplaces. The smaller building is for diphtheria patients and the other for scarlet fever. There is also provided a probationary ward.—*Boston M. & S. J., 1895, cxxxii, 289.*

EDITOR OF THE ARCHIVES.—DR. F. M. CRANDALL will edit the ARCHIVES OF PEDIATRICS, beginning with the next number.

Society Proceedings.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

Stated Meeting, March 14th, 1895.

"The Use of Alcohol in Diseases of Children."—Dr. August Seibert read a paper with this title. He said, that in 1884, he had published an article on acute gastritis in infants, in which he had advised that nursing mothers should abstain from beer drinking. Six years ago, in an article on "The Mechanical Treatment of Gastro-enteritis in Children," he had laid down the rule, that the only scientific treatment of this condition was the ridding of the intestine of germs, and supplying to the system large quantities of water. In all forms of acute and chronic gastro-enteritis, even in cholera infantum, we should avoid alcohol, as it only served to stimulate the already diseased mucous membrane. In its place, small quantities of black coffee or tea might be given. He had almost abandoned the use of alcohol in typhoid fever, particularly in children, in whom the disease ran a mild course. Even when administered to the convalescent patient, it only served to retard and impair digestion, and in this way, favor, what we should strive to repress—bacterial activity. In the treatment of intestinal diseases, it should be remembered that alcohol was not a disinfectant of the alimentary tract.

The author then referred to the very common practice of prescribing enormous quantities of alcohol for infants suffering from fibrinous and broncho-pneumonia, and justifying this course by pointing to the fact that these little patients *tolerated* such heroic dosing remarkably well. What else could they do? It was his opinion that we could not prevent heart failure by the early and continued administration of alcoholic stimulants, and that such a practice resulted in the same disastrous effects as are observed when liquor is taken in excess. He did not use alcohol in the treatment of pneumonias of children, except where collapse was imminent, and then he gave it in concentrated form. It was far from being an established fact, that the toxines of pneumonia were capable of counteracting the poisonous effects of alcohol, and of leaving only its beneficial action, and it could not be gainsaid that children who had been treated freely with alcohol were slower in regaining their normal appetite and digestion, owing to the existance of an alcoholic gastritis. One reason that so many physicians were ardent advocates of the free use of alcohol, was that they had been deceived by the increased fullness of the pulse into believing that the alcohol was doing the heart great good. As a matter of fact, this increased fullness was the result of the vaso-motor paresis produced by the alcohol. As the feeble heart action in pneumonia was due to the destructive action of the absorbed toxines on the nerve tissues, and the deficent oxygenation of the blood, we had a ready means of improving the circulation by freely admitting fresh air to the sick-room. In the healthy person, alcohol produced depression in proportion to the amount of alcohol ingested; how then could we expect a beneficent action from this poison when administered to a person sick with pneumonia?

In the malignant cases of scarlatina, he had never seen any benefit from the administration of alcohol, and in the mild cases, where there was no pharyngeal necrosis, it was not needed. Moreover, the hyperaemia of the skin is aggravated if alcohol be given, owing to the consequent vaso-motor paresis. In severe cases, where the necrotic condition of the pharynx has resulted in sepsis, however, he had known a judicious use of wine or whiskey to be followed by improvement. He preferred, however, to give coffee, tea, cocoa and camphor during the day, and a good dose of an alcoholic at night.

Notwithstanding the almost universal employment of alcoholics in the treatment of diphtheria, a mortality of about forty per cent., even in towns supplied with the best medical talent, did not certainly seem to attest the value of this treatment. He had not prescribed alcohol for years for the milder forms of diphtheria, and he was inclined to doubt the value of alcohol even in the severer cases. Certain it was that small and frequently repeated doses of alcohol by their destructive action on the tissues of the nervous system, favored the introduction of toxines, and it was equally true that such a practice could not avert diphtheric paralysis. He had treated twenty-one cases of true diphtheria with Behring's serum since last December, and in none of them was alcohol prescribed. Although three of the number had laryngeal diphtheria, all of the twenty-one cases recovered.

In the treatment of nephritis, alcohol could only do harm when given in large doses, but in a few instances, light beer had served him well. He felt that aside from occasional emergencies, the amount of alcohol prescribed for sick children was in direct proportion to their ignorance of dietetics and hygiene.

DISCUSSION.

Dr. Joseph E. Winters said that he had long entertained very decided views on this subject, and that since he had begun the practice of medicine in New York City to the present, he had very rarely prescribed alcohol for sick children. The statement made in the paper about the deceptive fullness of the pulse produced by the administration of alcohol, was deserving of thoughtful attention as was also the point made about the influence of alcohol on the kidneys. As the vaso-motor paralysis following the ingestion of alcohol meant dilatation of the cutaneous capillaries, the patient suffered a serious loss of heat, with a consequent increased expenditure of the vital forces. Children rarely die of heart failure, but of respiratory paralysis, when suffering from pneumonia. From careful observations made in the Willard Parker Hospital, he felt that no benefit followed the administration of alcohol in diphtheritic paralysis, and he was equally certain that alcohol was rarely required during the active progress of scarlatina.

Dr. W. P. Northrup said that he also thought alcohol of but little value in the pneumonias of children; strychnine and digitalis had proved more efficacious in his hands. In diphtheria, the heart might require assistance in two stages—the early one, in which the system was overwhelmed with the poison, and the later stage of peripheral neuritis. In the former, he felt that he had seen the administration of alcohol followed by a slower and fuller pulse, and an improvement of the mental condition; in the latter, he thought alcohol did not have much place.

In the treatment of gastro-enteric diseases it did not seem rational to administer alcohol, except in rare emergencies. He had seen at many autopsies of children dying of gasto-enteric disease, plain evidence of the irritant action of alcohol on the mucous membrane of the stomach. While therefore, objecting to the administration of alcohol to children in many diseases, he wished it understood that he used it quite freely in severe sepsis.

Dr. Charles G. Kerley said that from careful observation of three hundred cases of pneumonia in children in an institution, he had come to the conclusion that alcohol was rarely required. About two-thirds of the cases studied were instances of lobar pneumonia. In the intestinal diseases of children he would not use alcohol, but in cases of diphtheria he believed in giving large doses of alcohol when the heart showed signs of failing. In the last stages of this disease, children would take large quantities of alcohol without exhibiting any deleterious effects from its use. Thus, for example, he once gave a baby of eighteen months, eight ounces of good brandy within twenty-four hours, without the infant showing signs of intoxication. The child recovered from the diphtheria, but as it shortly afterward developed enterocolitis and died, he had never felt sure whether or not this second illness might not have been brought about by this free alcoholic stimulation. In pneumonia, he had employed as cardiac stimulants, strychnine, strophanthus and nitroglycerine instead of alcohol.

Dr. W. L. Stowell said that from an hospital experience among adults, he had been led at first to use alcohol rather freely in the pneumonias of children seen subsequently, but experience had taught him that the alcohol was not satisfactory. A few years ago, he had published a report of upwards of four hundred cases which he had treated consecutively without a resort to alcohol. Where many physicians would have used alcohol, he had succeeded by using strychnia. Coffee was also a very valuable cardiac stimulant. For diphtheria, he relied on strychnia, caffein and food. The stimulating effect of alcohol was far greater than its food value in children, owing to their impressionable nervous system.

Dr. J. Milton Mabbott said that he was not prescribing alcohol as freely in diseases of children as formerly. It was his practice now, to give to very young children at the beginning of a pneumonia, the compound tincture of cinchona, or the elixir of calisaya. He ordinarily prescribed one drachm, every few hours.

The Chairman directed attention to the much too frequent custom in many families of giving children alcoholic drinks for all sorts of minor ailments, and expressed the hope that physicians generally would steadfastly set their faces against such a pernicious practice.

Dr. Seibert, in closing the discussion, said that increased experience had shown him the necessity of modifying the views he had expressed in a former paper. He believed that his paper in 1890 was the first published expression of opinion against the use of alcohol in both acute and chronic gastritis of children. The so-called "toleration" of infants for alcohol was due to the nerve centres having already become so diseased by the ingestion of alcohol that they will no longer react.

Dr. W. P. Northrup exhibited an apparatus devised by Dr. Joseph O'Dwyer for the treatment of opium poisoning. The apparatus originally devised by Dr. George E. Fell, of Buffalo, for this same purpose had not worked well in practice, and even his modified method, by which the trachea was opened, and air forced into the lungs, was difficult of application by the average practitioner. To obviate these difficulties, Dr. O'Dwyer had suggested the introduction of an intubation tube into the larynx, and the forcing of air through it by means of a rubber tube connected with a bellows. The outcome of this idea was the apparatus which he wished to present. The intubation tubes were made of various sizes, so as to render the method equally applicable to children or adults, and the bellows was connected to the intubation tube by a T-tube, one end of which was closed by the thumb of the operator during inspiration. On removing the thumb from the end of this canula, expiration is easily effected. To prevent the air from being too dry, a little distilled water is dropped into the canula during the performance of artificial respiration with this apparatus. Dr. Northrup said that in one case of brain tumor at the Presbyterian Hospital, in which there had been a sudden cessation of respiration, artificial respiration had been kept up with this apparatus for twenty-five hours. The post-mortem examination in this case had shown no lesion of the lungs, and repeated trials on the cadaver had demonstrated that even with the most ordinary care in the use of the apparatus it was difficult to do any damage to the lungs. The apparatus was quite portable, and the method easy of application.

Dr. J. Mount Bleyer said that in 1888, he had presented to the American Medical Association the first communication ever published regarding a method of performing artificial respiration through the agency of a catheter in the larynx and a pair of bellows. In his original apparatus he had used one bellows for expiration and one for inspiration. In 1893 he had saved three persons from asphyxiation by the use of this apparatus, and Dr. Gibbon, of Syracuse, had also made encouraging use of it on criminals.

Current Literature.

I.—MEDICINE.

Wise, John C: Scorbutus in Infancy. (*Med. Record, N. Y.*, 1895, xlvii., 363.)

He reports the following case:

S. M——, aged thirteen months, of healthy parentage, in comfortable circumstances, came under his care in October, 1893. The child had been fed soon after birth on artificial food. He had been a bad sleeper, was quite pale, and evidently not well nourished. While passing the summer of 1894 in Massachusetts, serious symptoms of malnutrition occurred; it had been standing and trying its limbs; now voluntary movements ceased, cheerfulness was lost, to be replaced by various manifestations of malaise and pain. The lower limbs remained flexed and helpless; extension gave great pain. There was also commencing swelling of the wrists and ankles. The disease was pronounced, in Boston, to be rachitic, and a treatment of cod-liver oil, lime, and the sirup of hypophosphites ordered. When seen in October, 1894, the symptoms were more decided; the limbs hung in a helpless way, or were flexed when recumbent; the ankles and wrists were considerably enlarged, with great general tenderness; temperature ranging from one to two degrees above normal. Appetite good, digestion fairly well performed. No diarrhœa, but stools of bad odor and color. Decided sweating of the head and upper extremities. Two upper incisors had erupted, were black and furrowed; the gums, though swollen and inclined to bleed, were not characteristic of scorbutus. In November, a hemorrhage had occurred into the orbit, the eye protruded forward and downward. The bone changes had advanced rapidly; the right thigh was swollen and extremely painful in its entire length. At a consultation held some two weeks prior to this time, cow's milk had been ordered more liberally, and beef-juice as an additional article of diet. The sirup of the iodide of iron in large doses was well borne. By December 1st, the infant was decidedly worse; the gums were the seat of fleshy growths, easily bleeding; the breath was so impure as to require frequent antiseptic washes. Loss of flesh had been continuous, and it was evident that without radical change there was no hope for it. The diet was made pure cow's milk, with usual addition of lime-water; to the milk was also added sieved potato, and sweet oranges allowed. In two weeks' time a great change for the better was obtained in every respect—the swelling slowly subsided, the gums became firmer, the teeth whitened, and voluntary movement was resumed, so that at Christmas the little sufferer was practically restored to health.

Bacteriological Diagnosis of Diphtheria. (*Med. Record, N. Y.*, 1895, xlvii., 382.)

The following are the conclusions concerning the bacteriological diagnosis of diphtheria based on the recent investigations made by Drs. Hermann Biggs, W. H. Park, and Alfred L. Beebe, under the direction of the Health Department of the City of New York and officially reported to that body.

"1. All inflammation of the mucous membrane due to the diphtheria bacillus of Loeffler should be included under the name 'diphtheria,' and in this report they have been so included. An acute hyperæmia of the mucous membrane caused by the Loeffler bacilli is considered as truly diphtheria as an inflammation with pseudo-membrane or exudate, and a case in which the lesions are confined to the larynx or bronchi as truly diphtheria as one in which the tonsils and pharynx are involved.

"2. Under pseudo-diphtheria should be included all inflammations of the mucous membranes which simulate true diphtheria and which are due to streptococci, or, more rarely, other cocci.

"3. The name croup or membranous croup should be regarded as a term merely indicating that the location of the pseudo-membranous or exudative lesion is in the larynx, and not as describing the nature of the disease, whether diphtheritic or pseudo-diphtheritic. In New York City at the present time, eighty per cent. of the cases of 'croup' are diphtheria.

"4. The examination of cultures made upon solidified blood-serum under the conditions insisted on by the Department form a reliable method of determining whether the diphtheria bacillus is present or absent in a throat. For diagnostic purposes, cultures should be made before the pseudo-membrane or exudate begins to disappear.

"5. Virulent diphtheria bacilli were apparently in about one per cent. of the healthy throats in New York City at the time of these examinations. Diphtheria, however, was rather prevalent in the city at this time. Most of the persons in whose throats they exist have been in direct contact with cases of diphtheria. Very many of those whose throats contain the virulent bacilli never develop diphtheria. We must therefore conclude that the members of a household in which a case of diphtheria exists should be regarded as sources of danger, unless cultures from their throats show the absence of diphtheria bacilli.

"6. The bacilli found in the original serum cultures, which in appearance and staining are identical with the typical Loeffler diphtheria bacillus, may be regarded, for diagnostic purposes, as virulent diphtheria bacilli, if the cultures have been made either from throats containing exudate or from those of persons who have been in contact with true diphtheria, for investigation has shown that over ninety-five per cent. of such bacilli are virulent.

"7. All bacilli which are identical with the virulent Loeffler diphtheria bacillus, morphologically, biologically, and in staining by reagents, should be classed with the diphtheria bacilli, whether they have much, little, or no virulence when tested in guinea-pigs. Bacilli which have entirely lost their virulence rarely, if ever, regain it. They probably are incapable of causing diphtheria, for the twenty-four cases in which they were found by us never developed any lesions, nor were they the origin of any case of diphtheria, so far as could be ascertained.

"8. The name pseudo-diphtheria bacillus should be regarded as applying to those bacilli found in the throat which, though resembling the diphtheria bacilli in many respects, yet differ constantly from them. These bacilli are rather short and are more uniform in size and shape than the Loeffler bacillus. They stain, as a rule, equally throughout with the alkaline methyl blue solution and produce alkali in their growth in bouillon. They are found in about one per cent. of the healthy throats in New York City, and seem to have no connection with diphtheria. They are never virulent.

"9. One or more varieties, both of streptococci and other forms of cocci, exist in the great majority, and possibly in all, of the healthy throats in New York City. Cultures from the throats in cases of pseudo-diphtheria contain more cocci, especially more streptococci, than those from healthy throats, but otherwise do not seem to differ.

"10. The investigations of the Health Department have given striking evidence of the marked difference in mortality between true and pseudo-diphtheria, for while it was twenty-seven per cent. in diphtheria, it was under two per cent. in pseudo-diphtheria.

"11. The combined clinical and bacteriological investigation of over five thousand cases has demonstrated clearly the fact that many of the less characteristic cases of diphtheria and pseudo-diphtheria are so similar in appearance, symptoms, and duration that it is impossible to separate them, except by bacteriological examinations. In the more severe cases and after the disease has fully developed, cultures are less necessary, although their systematic use is desirable.

"12. Persons who have suffered from diphtheria should be kept isolated until cultures prove the bacilli have disappeared from the throat, for not only are the bacilli which persist in the throat virulent, but they are not infrequently the cause of diphtheria in others. Where cultures cannot be made, isolation should be continued for at least three weeks after the disappearance of the membrane, for our experience has shown that it is not unusual for the bacilli to persist this length of time.

"13. In pharyngeal cases in which thorough irrigation of the nostrils and throat with 1 to 4,000 bichloride of mercury solution has been practiced every few hours, the bacilli have not remained in the throat for as long a time after the complete disappearance of the pseudo-membrane as when no antiseptic has been employed. Other cleansing and antiseptic solutions are also useful.

"14. Inflammations of the mucous membranes due to streptococci, either alone or associated with other cocci, are usually mild in character. These inflammations may be more serious when the lesions are located in the larynx, or when they are complicated by scarlet fever or measles.

"15. While the streptococci and perhaps other forms of cocci may be considered as the primary etiological factor in pseudo-diphtheria, yet, in the majority of cases at least, certain predisposing factors, such as exposure to cold or other deleterious influences or the presence of certain infectious diseases, appear to be of great importance in determining the occurrence of the disease.

"The streptococci which under these conditions apparently cause the disease are probably those which had for a long time existed in the throat, and not those freshly derived through communication with other cases of pseudo-diphtheria. In a small number of cases, indeed, the histories suggest a direct communication, but the causation may be equally well explained by the supposition that the second case shared with the original one the same predisposing cause.

"16. The slight mortality and the usual mildness of the cases of pseudo-diphtheria do not warrant us in enforcing isolation, even if further investigation produced positive proof that this disease is directly communicable.

"With the results of these investigations before us, we can appreciate the difficulty of exterminating diphtheria from a city like New York. On the one hand, we have cases of diphtheria scattered all through the city, many of which are so mild as to be unrecognized, and, on the other hand, we have the crowded tenements with their ignorant and shifting population, where proper isolation of the patient from other members of the family, or of the family from other inmates of the building, is usually impossible unless harsher measures are adopted than are now customary. With stricter isolation of patients and intelligent and systematic supervision of the schools and tenements, we can certainly reduce the number of cases of diphtheria in the city, but the total extermination of th disease under the existing conditions of life here does not seem probable unless we can acquire new means to combat the disease."

Smith, Charles S.: Ten Consecutive Cases of Diphtheria Treated with the Antitoxin. (*Med. News*, Phila., 1895, lxvi., 325.)

Behring's antitoxin was used and all the cases made a rapid recovery.

Athayde, N.: Sottvi. (*O Archivo Medico da India*, November, 1894.)

This is the term used by the natives of Goa for tetanus neonatorum; it is derived from *sostt*, six, and *vi*, life, and signifies the sixth day of life, the disease being so-called because the first symptoms are often observed at this time. The writer concludes, as the result of his studies of infantile tetanus: (1) That it is of parasitic origin; (2) that the tetanic microbe is found in the lochia;

and (3) that the observance of antiseptic precautions during parturition and for a few days subsequently, until the lochial discharge has ceased and the umbilical wound of the child has healed, will prevent the disease.

Helbing: Treatment of Phlegmonous Pnaryngitis. (*Archives Kinderheilkunde*, B. xviii., H. i., ii.)

In severe cases, croton oil was rubbed into the skin at the angle of the jaw. For a single rubbing three or four drops were used on cotton. Ten cases were treated in this way, and in all the pain and swelling subsided in a few hours. An eczema may result from the irritation to the skin, and be troublesome.

Dentition as a Factor in Disease:—(Open Letter from Dr. K. Swaita to Prof. G. Somma.—*Ref. Archives Kinderheilkunde* B. xviii., H. i., ii.)

It must be allowed that dentition through reflex irritation may cause restlessness, disturbances of digestion, etc., but it is to be denied that this process is frequently a cause of convulsions, brain disease, diarrhœa or bronchitis. Swaita made inquiries among sixteen hundred mothers concerning the way in which their children cut their teeth. The majority claimed there was no disturbance, other than restlessness or irritability. In those in which there was a severe disturbance during the cutting process, errors in diet and the season of the year, could account for the trouble without looking to the teeth. Among well cared for, well fed children, dentition causes no marked disturbances.

Cima: Case of Congenital Malaria with Large Spleen in a Two Months Old Child. (*Ref. Archives Kinderheilkunde* B. xviii., H. i., ii.)

The mother of the child during the last months of pregnancy, had resided in a malarial neighborhood and had had malarial fever. The birth took place at term in a neighborhood free from malaria. The child was well developed, and all went well until the twentieth day when she became ill with a qnotidian, intermittent fever. The attack came on at eight o'clock every morning, and lasted four or five hours, being attended by a moderate amount of sweating. There were frequent vomiting attacks and then green stools; upon examination the spleen was found to be enlarged reaching one-half an inch below the umbilicus and to the right, to the nipple line. The liver was not enlarged. The father of the child was not syphilitic. The mother was at this time suffering also from malaria and an enlarged spleen. Both mother and child were treated with quinine and under its use the symptoms subsided. Six weeks after beginning treatment the child was completely cured. The spleen became normal. Inasmuch as the child was born in a neighborhood free from malaria, and as the last months of pregnancy were passed in a malarial locality, the author is of the opinion that there was an intra-uterine infection. Plasmodium were not found in the child's blood.

Comby, Jules: Aconite in Infantile Therapeutics. (*La Medicine Moderne*, December 5, 1894.)

Aconite acts in the manner of a depressant poison to the nervous system; it produces first formication and then anæsthesia of the skin and muscular inertia; following anæsthesia and paralysis come nausea and vomiting, slowing of the pulse and of the respiration, and finally death by asphyxia or syncope. In toxic dose aconite causes dilatation of the pupils. Diuresis is also one of the effects of this drug. Aconite paralyses primarily the nerves of sensation, and it is especially.a sedative and analgesic remedy, depressing the functional activity of all the great organic systems. Hence it follows that aconite is indicated in all cases of excitability and hyperactivity of these systems, such as neuralgic pains, headache, cardiac hypertrophy with palpitation, spasmodic cough, etc. In the case of children we may give aconite whenever the spasmodic element is clearly marked; in asthma and the asthmatic crises of bronchial adenopathy, in pertussis and other spasmodic coughs, in laryngismus stridulus, in palpitations associated or not with hypertrophy of the heart, and in convulsions. By reason of its sedative and depressant action aconite is contra-indicated in all cases in which prostration exists or threatens. If the respiration is embarrassed, if the heart is in asystole, if the little patient lies somnolent and depressed, then it is not to aconite that we must have recourse but to tonics and stimulants. In capillary bronchitis, broncho-pneumonia, pneumonia, valvular affections of the heart, pericarditis, and in all cases of collapse occurring in acute infectious diseases, aconite is particularly contra-indicated. It is in the spasmodic and painful affections of the respiratory passages in children that the drug finds its special indication.

Egan, P. Ralph: A Case of Infantile Scorbutus in Montana. (*Journ. Am. Med. Assoc.*, 1895, xxiv.. 183.)

N. F., a female born July, 1891; has nursed until three months old. She was then fed on Mellin's Food and condensed milk. On this diet she seemed to thrive for about nine months. At five months her teeth began to appear; during the next two months she cut eight, then no more showed until she was sixteen months. Her meals when nine months consisted of the following: Two tablespoonsful of Mellin's Food to one of condensed milk in one half-pint of water every three hours. She never learned to creep on all fours but when about seven months old she used to pull herself about the floor in a sitting position, and to stand on her feet. The first indication of her illness was that she refused to move in this way, or to stand when supported. It was not noticed that she was fretful but she grew more delicate, seemed tired all the time, and unable to move her limbs. Her favorite position was with her head resting on her nurse's arm and her legs drawn up. When she was about a year old it was noticed that her gums were dark and swollen. It was considered a vascular outgrowth, which was accordingly removed and cauterized. Notwithstanding this treatment the gums continued to enlarge and bleed on pressure.

At about the same time it was noticed that her left leg was painful and that she cried when it was handled or when her shoes were put on. Soon after her right leg became similarly affected. These were considered rheumatic symptoms, and she was treated accordingly. During this time her head perspired freely and needed to be dried quite frequently. She also suffered from diarrhœa throughout the summer. Her discharges were generally green and slimy; blood was passed with some of the motions, so as to give rise to the suspicion of "bleeding piles." No fever was observed at any time during her illness; neither was any change observed in the color of her urine. At no period of her illness were her parents or attending physician able to note any swelling, but no accurate measurements were taken. One of the doctors under whose observation she now passed made an attempt to change her diet to cow's milk. It was found to disagree, causing nausea and constipation, so the attempt was abandoned. When she was about sixteen months old the patient was anemic but fairly developed; the muscles, however, were soft and flabby, the hair was sparse and the head moistened with perspiration ; there was no craniotabes. The chest was well formed but there seemed to be slight beading of the ribs. The abdomen was not prominent. The legs lay helpless, were not moved, and were exceedingly tender to the touch. The thighs appeared slightly infiltrated between the knee and the hip, but were smaller in size. The arms were freely moved. There was no enlargement of any of the epiphyses and in fact no symptoms of rachitis, save slightly "beaded" ribs, and marked perspiration about the head. There were no petechiæ present and no fever. The gums notwithstanding frequent cauterization, were so enlarged as almost to cover the teeth, of a dark purple color, and bled on the slightest application. The breath was foul and the bowels relaxed.

She made a rapid recovery under anti-scorbutic treatment.

The Age Mortality of Cases of Diphtheria Treated with Antitoxin. (*Brit. Med. Journ.*, 1895, i. 259.)

For comparison with the table published in the *British Medical Journal* of January 19th, giving the deaths at various ages of the cases of diphtheria treated with antitoxin reported by Professor Widerhofer and Dr. Goodall, we have looked through all the similar cases which have from time to time been reported in our pages, down to and including the issue of January 26th, and have tabulated the results in like form. The following is the result:

	CASES TREATED.	DEATHS.	PERCENTAGE OF DEATHS.
Under 1 year.................	4	2	50.0
1 to 2 years.................	9	3	33·3
2 " 3 "	6	1	16.6
3 " 4 "	12	1	8.3
4 " 5 "	10	3	30.0
5 " 10 "	23	9	39·1
10 " 15 "	15	2	13·3
Above 15 years...............	16	1	6.2
Total..................	95	22	23·1

Professor Widerhofer's totals give a mortality of 24 per cent., Dr. Goodall's of 19.4 per cent., and the total of the various cases reported at different times in the *Journal* a mortality of 23.1 per cent.

No one of the three groups of cases is, however, sufficiently large to be of much value in regard to age mortality, but it certainly is rather surprising to note the very heavy loss of life among the general cases at ages between five and ten, amounting to 39.1 per cent., compared with the very trivial mortality at that period of life in Widerhofer's and Goodall's cases, namely, only 5.4 per cent.

Friedenwald, Harry: Ante-Partum Ophthalmia Neonatorum (Intra-Uterine Ophthalmia.) (*Med. News, Phila.*, 1895, lxvi., 257.)

The writer gives a short abstract of eighteen cases which he was able to find in medical literature, and reports the following case which came under his own observation at the "Maternité" of Baltimore.

The mother had chancroids and venereal warts. The child was born July 2, 1890, the mother having been in labor for two days. The membranes broke at 6.15 A.M., and the child was delivered at 9 A.M. of the same day. Silver nitrate (2 per cent.) was instilled immediately; within one hour after birth, when the child was washed, the nurse noticed that there was pus in the eyes, and called the attention of the resident physician, Dr. S. H. Allen, to it. On the following day he found the eyes discharging a yellowish fluid; there was not much swelling; there were opacities of both corneæ, but no ulcers. The treatment consisted in the application of cold and silver nitrate. The child was discharged July 30th, with large opacities of both corneæ.

He also gives the notes of the following similar case reported by Dr. Edith Eareckson: She was called to attend a colored girl in her second confinement, March 17, 1893, and was informed that the membranes had ruptured eight hours before she arrived. The labor was tedious, there being a face-presentation, and the child was not born till seven hours later. At birth the eyelids were much swollen and tightly closed. When forced open to use Credé's preventive silver nitrate, muco-pus jetted out. The eyes were washed as thoroughly as possible with a solution of mercuric chloride, and a 1 per cent. solution of silver nitrate was dropped in. Nine hours later much pus was again found in both eyes. The condition of the corneæ was not noted. After the fifth day the case passed out of her treatment, and nothing further was heard of it.

Jordan: Diphtheria. (*Brit. Med. Journ.*, 1894, ii. 1369.)

Mr. Jordan made a short communication to the *Manchester Med. Soc*, on the treatment of diphtheria. The most important part of his paper was devoted to a consideration of mild forms of diphtheria where no membrane formed. As this form was generally recognisable, and might give rise to a severe attack in others with all the sequelæ usually met with in typical attacks of the disease, Mr. Jordan thought that this form of the disease (diphtheroid) should be treated just in the same way as the regular type. His method of treatment was to order the fauces to be well painted every hour, night and day, with a large brush, holding as much as possible of a glycerine-saturated solution of boracic acid. This should be done with intelligence and firmness; then immediately afterwards a drink of beef-tea, and then a small dose of a mixture containing tannin, chlorate of potash, and dilute nitro-hydrochloric acid. This treatment should be continued, gradually lengthening out the intervals until all redness had left the throat, that is, until infection has ceased. The idea was that boracic acid being a strong oxidiser, by applying it frequently, the diphtheritic poison was destroyed so far as it came in contact with the disinfectant, as soon almost as it was formed. By these means the throat was kept clear of mucus, and regularity of feeding and of treatment, with intervals of rest was secured.

Morrison, William Alexander: The Value of the Stomach-Tube in Feeding After Intubation, Based upon Twenty-Eight Cases; also its use in Post-Diphtheritic Paralysis. (*Bost. Med. and S. J.*, 1895, cxxxii., 127.)

To obtain satisfactory results, and to prevent undue exhaustion in the child, certain precautions must be observed. Two assistants are required. The child is rolled in a blanket with the hands by the sides. The first assistant sits in a chair near the bedside, and holds the child firmly in a reclining position upon his left knee. The second assistant holds the patient's head immovable. A soft-rubber catheter, to which a funnel is attached, is lubricated and introduced into the nostril with the eyelet on the under side, as it offers less resistance in entering the naso-pharynx.

He gives the details of twenty-eight cases of which twelve or 42.8 per cent. recovered; and in conclusion says, that, we have, in feeding by the stomach-tube after intubation and in all other cases where there is interference with the act of deglutition, a method which is easy of application; which permits a definite amount of food to be placed in the stomach, thus fortifying the system against combined exhaustion and septic infection; which obviates both the discomfort and pain produced by the futile attempts to swallow; and which will also prevent the danger of deglutition pneumonia or suffocation.

Knapp, P. C.: The Treatment of Chorea with Especial Reference to the use of Quinine. (*Bost. M. and S. J.*, 1895, cxxxii., 204.)

He gives the details of eight cases of chorea treated with quinine. The hypothesis on which quinine is recommended for the treatment of chorea seems untenable, and the therapeutic results are based thus far on too few cases to warrant us in ascribing greater virtues to this drug than to arsenic. Not having the idea at the time of publishing the results of this very imperfect trial of the drug, the results of one season's trial, did not seem to him of sufficient value to lead him to try it in private practice, or in subsequent terms of service at the hospital, and he went back to the former custom of supplementing the rest and regimen with full doses of arsenic, associated if necessary with iron or other tonics, and, in case of great motor disturbance and restlessness, with sulfonal or other sedatives.

Sevestre: Heart Failure in Typhoid Fever in Children. (*Le Progres Medical*, December 22, 1894.)

Although typhoid fever less often assumes an adynamic form in children than in adults, yet cases of cardiac asthenia are not very rare. Heart failure sometimes appears without warning, the child falling into a syncope during which he dies. In other cases the syncope passes away but leaves the patient prostrated, pale, cold, cyanotic and covered with a clammy sweat. The pulse is rapid, but weak, wavy, very compressible, and often irregular. Upon auscultation the heart sounds are faint and muffled, presenting the characteristics of what has been described by Huchard and others as embryocardiac, that is, the two sounds are indistinguishable, the one from the other, neither by their timbre nor by the inequality of the intervals separating them. This severe form of heart failure is rare but it is not uncommon to meet with a moderate degree of this condition, as evidenced by a light cyanosis, a coolness of the extremities, and changes in the heart sounds and pulse. Occasionally the symptoms appear to be brought on by a cold bath, or, if present in slight degree, to be aggravated by it. It is of supreme importance, therefore, to keep a very close watch upon the pulse in all cases of typhoid fever in children, of greater importance indeed than to keep accurate record of the temperature. In the treatment of cardiac asthenia, M. Sevestre employs caffeine, preferably by hypodermic injection. The following is the formula employed :

℞	Caffeinæ	ʒ ss.
	Sodii benzoatis	gr. xxxvi.
	Aquæ destillatæ	q.s. ad. ʒ iis.

M. Sig.: For hypodermic use. Fifteen minims of this solution contain three grains of caffeine. The author injects 15 minims of this solution, twice or even three times a day, in the case of a child five years of age or older. For younger children the dose is slightly decreased. When for any reason hypodermic injections cannot be employed the caffeine may be given by the mouth. The following formula used by the author which he says is of pleasant flavor and readily taken by children :

℞	Caffeine	
	Benzoate of soda	*āā* gr. xxiv.
	Vanilline	gr. ¾
	Syrup of tolu	ʒ xiv.
	Rum	ʒ ii.
	Water	q.s. ad. ℥ iv.

M. Sig.: Tablespoonful twice or three times a day for a child of five years.

Sometimes the injection of five drachms of a normal salt solution two or three times a day is an excellent adjuvant to the caffeine, especially as a means of increasing arterial tension.

Lawrie, Macpherson: Case of Splenic Leucocythæmia, Treated with Bone Marrow. (*Brit, Med. Journ.*, 1894, ii., 1238.)

V. H., aged seventeen months, a peevish, miserable child, was in an advanced state of emaciation, and with a greatly distended abdomen. Appetite was entirely lost. Sickness and diarrhœa were constant and severe. The skin was harsh and dry, and the pallor of skin and mucous membranes was extreme. Respiration was rapid and shallow; the pulse was about 120. There was a daily rise of temperature, followed by exhausting perspirations. There was no albumen or sugar in the urine.

Abdominal examination revealed the existence of an enormously enlarged spleen, which occupied two-thirds of the cavity. The anterior edge, easily defined, was indicated by a curved line extending from the ensiform cartilage to the middle of Poupart's ligament on the left side, and passing well to the right of the umbilicus. The surface was smooth and free from tenderness. A slight amount of fluid existed in the peritoneal cavity; there was no evidence of effusion elsewhere.

Inquiry failed to elicit any history of syphilis or malaria A teaspoonful of bone marrow thrice daily was prescribed with appropriate nourishment, and no other treatment.

Although the case seemed somewhat hopeless, improvement rapidly followed; appetite soon returned, sickness and diarrhœa ceased, and fever disappeared. The skin and mucous membrane assumed a healthy color, and the child put on flesh.

The most striking alteration was the steady diminution in the size of the spleen, which can now only be felt in its normal position, under the ribs. After four months' treatment the patient has been restored to health and strength.

Brown, Charles Henry: Infantile Amyotrophic Lateral Sclerosis of the Family Type. (*Journ. Nerv. and Mental Dis.*, 1894, November.)

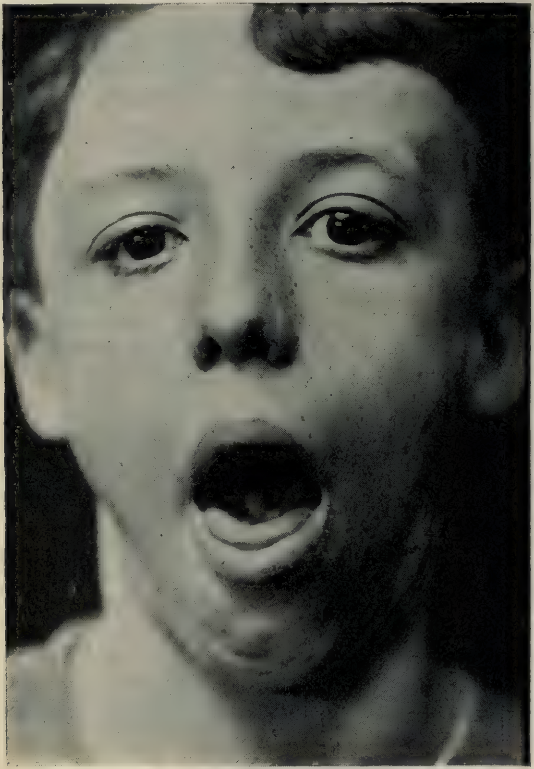
The patient is a boy fifteen years of age, of German parentage, and about whose early history very little information is to be had.

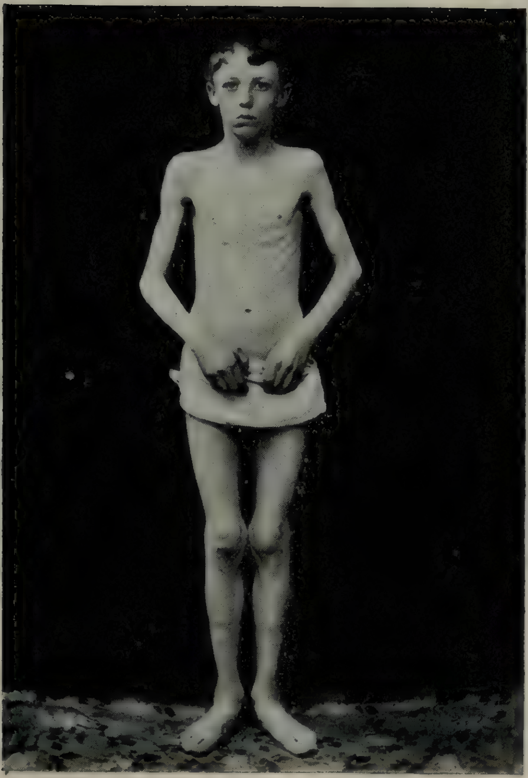
The first symptoms were noticed three years ago, and were inability to whistle and to talk plainly. The progress was so rapid that in a week the patient could not without effort move his tongue, whistle nor swallow. Soon there was inability to laugh or entirely close the eyes, and the least exertion caused difficult breathing.

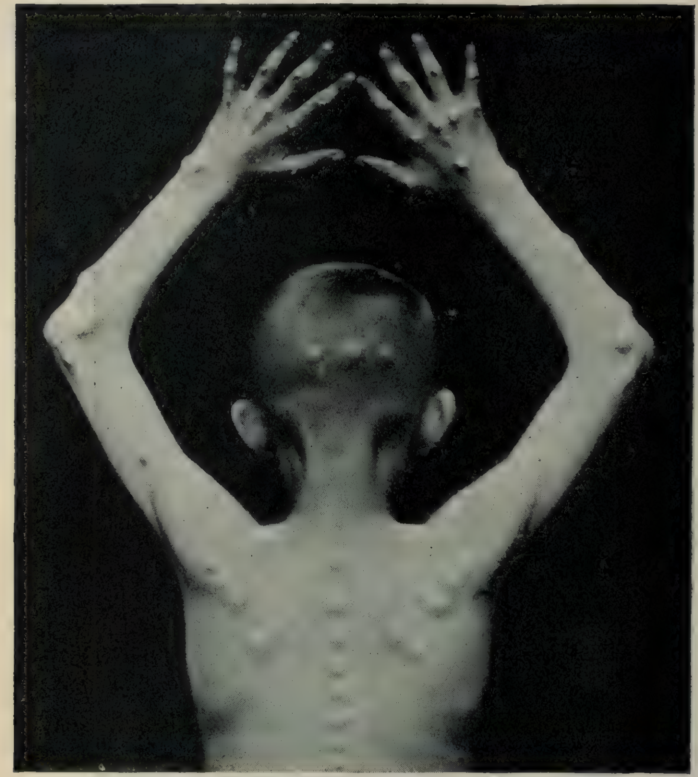
The hearing began to deteriorate. Then came inability to button or unbutton the clothes and rapid wasting of the muscles. Twitchings began to be felt in various muscles.

Plates from photographs show that there is lateral atrophy of the tongue and very little power over the organ. All the muscles of the throat and neck are much affected, and the diaphragm appears to be also. Respiration is very greatly interfered with. Fibrillary twitchings, exaggerations of the reflexes and retraction of tendons completes the description.

The age and the fact that although the case grew worse until six months ago it then came to a standstill, shows that this cannot class as a case of ordinary amyotrophic lateral sclerosis. In other respects the symptoms agree.







DR. CHARLES HENRY BROWN'S CASE OF CHOREA WITH SUBCUTANEOUS NODULES. (*Journ. Nervous and Mental Dis., August, 1893.*)

II:—SURGERY.

Piechand, T.: Hydatid Cyst of the Parotid in a Child Seven Years Old. (*Archives Cliniques de Bordeaux*, No. 11, 1894.)

The parents had noticed eighteen months ago that the right side of the face was swollen; the child complained of a little of toothache on that side. The swelling continued to increase and it was remarked that the boy snored during sleep and swallowed with some difficulty though without pain. Examination of the child showed the presence of a cystic tumor in the parotid region which, upon puncture was found to be an hydatid cyst. A cure resulted from simple puncture without operation.

Botesco, H.: A Case of Hydrocephalus. (*Spitalul*, No. 17, 1894.)

The case was one seen in the service of Prof. Romniciano. The child was seven months old and had an enormous hydrocephalus. The skull was twice tapped, 250 c.c. of fluid being removed at the first operation and 500 c.c. at the second. At the autopsy the brain was found to weigh 150 grammes. The adipose tissue was everywhere enormously developed; the cranial wall consisted of a thin transparent parchment-like membrane, with little islets of ossification scattered here and there.

Gampert: The Treatment of Hypertrophied Tonsils by Means of Incisions into the Tonsils. (*Archives Kinderheilkunde*, B. xviii., H. i., ii.)

The crypts in the tonsils are slit open and emptied, as a result a contraction of the hypertrophied body taken place. Three or four operations may be necessary. It is well to allow about a week to intervene between the treatment.

Popescu, D.: Congenital Parotid Cyst (*Spitalul*, No. 20, 1894.)

The child when first seen by the writer was five weeks old. At that time there was a marked swelling at the angle of the lower jaw. The tumor had been punctured twice with a needle; the first time blood came out, the second time serum. At the time of examination the tumor was soft and fluctuating situated in the parotid region. The child's hereditary history was good. A puncture was made with an aspirator needle and about twelve drachms of a clear yellow serous fluid withdrawn, this being followed by an injection of tincture of iodine into the sac. The fluid rapidly reaccumulated, and five days later the cyst was again punctured with a trocar and a quantity of liquid drawn off. Iodine was again injected, and this time a permanent cure resulted.

Page, Olof: Laparotomy Consecutive to an Operation for Suppurative Appendicitis. (*La Revista Médica*, October, 1894.)

The patient was a boy, twelve years of age, who had been suffering for several days from symptoms of appendicitis. As his condition grew steadily worse it was decided to operate, and accordingly an incision was made in the usual way over the most prominent part of the dull region. The abscess cavity was washed out and packed with iodoform-gauze. For a few days after the operation everything seemed to go well, but in about two weeks the symptoms of intestinal obstruction returned and the child was succumbing. The patient was anæsthetized and the wound of the first operation was opened. Exploration through this opening revealed the presence of some constricting bands to the left of the median line. As these could not be easily reached the edges of the incision were freshened and firmly united by five silk sutures. Then a median laparotomy was at once performed, the incision extending two inches above and below the umbilicus. A dense band over two inches in width was discovered binding down, though not adherent to, the intestines beneath. This was ligatured and divided as were also two other smaller bands. The wound was now closed and dressed. On the seventh day the sutures were removed, and the child made a good recovery.

Barker, A. E.: Three Cases of Acute Intussusception Treated by Abdominal Section. (*Brit. Med. Journ. 1894, ii., 1237.*)

Two of the patients were infants and the details of the cases are as follows:

Case I.—Laparotomy: Reduction by Manipulation: Hyperpyrexia: Death.—A male, aged five months, was taken suddenly ill on the morning of May 13th. The illness commenced with screaming, and shortly afterwards blood and mucus were passed by the bowel. The screaming and passage of blood and mucus continued, and he was again brought on May 14th, when a sausage shaped tumor, about 3 inches long, was felt lying obliquely on the left side of the abdomen. Per rectum the intussusception was felt about an inch and a half above the anus. The child passed blood and mucus after examination, but, except for occasional screaming, did not seem very ill. Chloroform was at once administered, and Mr. Barker ran warm water into the anus at a pressure of 3 feet; after 5 ounces had been injected it was returned, and, on examining the abdomen, no trace of the tumor could be found. The child was therefore put to bed, and half a minim of tincture of opium administered. He slept quietly until about 6 a.m. (May 15), when he had an attack of screaming. Soon after, blood and mucus were again passed. On examining the abdomen and rectum later in the morning, the intussusception was found to have returned, and to be as it was before the apparent reduction. The temperature was 99.4° F., and the child seemed in a good deal of pain. Chloroform was administered, and Mr. Barker opened the abdomen in the middle line. The intussusception was easily reduced by squeezing the intussuscipiens upon the apex of the intussusceptum gradually as far as the cæcum. After reduction, which was completed in seven and a half minutes, the intestine last returned was seen to be congested, but the peritoneal surface looked healthy. The abdomen was closed, and the child returned to bed. In the evening he was suffering from a good deal of shock; 10 drops of brandy were ordered every two hours. The temperature rose to 105.4° F. at 4 a.m. on May 16th; he was sponged with tepid water, but this only reduced it 1°, and it rose again to 105.8° at 10 a.m. Sponging brought it down to 104°, but in the afternoon it reached 107.8°; the child became livid, the pulse failed, and he died at 5 p.m. At the necropsy the general peritoneum was found to be healthy. The cæcum and lower half of the ascending colon were covered with recent lymph, and the serous and mucous coats were congested. There was, however, no ulceration or sloughing.

Case III.—Laparotomy: Difficult Reduction: Pyrexia: Recovery.—A male, aged four months, suddenly began to scream and draw his legs up as if in pain, at 3 p.m. on July 19th. At 4.30 p.m. the bowels were opened, only blood and slime passing. After the onset the screaming continued at intervals, and he was sick after food. Passage of blood and slime was repeated on the morning of July 20th. He was admitted to the hospital and was found to be suffering from varicella and to have an elongated tumor on the right side of the abdomen curving towards the middle line at its upper end; it was freely movable from side to side, and was somewhat tender. Nothing could be felt *per rectum.* The abdomen was opened in the middle and the intussusception reduced, after quite some difficulty. The temperature fell to normal on the second day and the infant made a good recovery

Ord and Cotterell: A Case of Microcephalus Treated by Linear Craniectomy. (*Brit. Med. Journ., 1895, i., 478.*)

They related the case of a female child, aged 19 months, who was first seen by Dr. Ord on July 28, 1893. The child was born at term; there was no difficulty at birth, and no instruments were used. She was a healthy and well-nourished infant until 13 months old, when she was stated to have had influenza, which was followed by "gastric fever." At 16 months of age she was suddenly seized with fits, which appeared from the description to have been general convulsions, marked by an extreme degree of opisthotonos. She is said to have had sixty fits in five days. After the fits passed off the child began to waste, and lost power in her limbs. She also ceased to notice what was going on around her. When first seen the child was very feeble and was quite unable to maintain a sitting posture for more than a moment. There was a reversal of the normal relations of size between the face and the skull. There was no trace of fontanelles, and the child was dull and apathetic, though easily roused by loud sounds. She did not seem to be aware of the approach of anyone by sight alone, unless some noise was made, but nothing could be discovered in the condition of the fundus to account for the apparent loss of sight, which was attributed to a weakness of the power of perception analogous to the weakness observed elsewhere in the body. It was decided to try linear craniectomy, and Mr. Cotterell performed the operation in sections, removing portions of bone on August 9th, 23d, and September 4th and 13th. Improvement was noticed after the second operation, and was maintained until she became like an ordinary child, running and walking about and with every indication of very good eyesight. The bones of the skull were found to be much thinner than normal, and there was often little or no diploë to be found. On removal of the pieces of bone the dura mater usually bulged into the groove. The great thing in these operations was to avoid hyperpyrexia and shock. The former might usually be averted by only taking away a small piece of bone at each sitting, and by taking care not to bruise the subjacent brain substance. In addition to the foregoing precautions shock might also be minimised by applying an improvised Esmarch's bandage to prevent hæmorrhage.

Power, D'Arcy: Recurrent and Severe Hæmorrhage after the Operation for Cleft Palate. (*Brit. Med. Journ.*, 1894, ii., 1174.)

R. H. T., a boy, aged 3 years, was admitted into the Victoria Hospital for Children on March 13th, 1894, with a harelip which did not extend into the nose, and complete cleft of both the hard and the soft palate on the left side. The palate was closed throughout its whole extent on March 19th, the edges being brought together with sutures of horsehair and silver wire, after separation of the soft parts through antero-posterior incisions about a third of an inch from the edges of the cleft. There was free bleeding at the time of the operation, but it was not excessive. There is a note on March 23d stating that the boy is behaving well. He lies quietly in bed and does not attempt to talk. On March 28th, nine days after the operation, the notes record that "the child got his hand into his mouth and picked at its silver sutures, setting up a troublesome hæmorrhage." This was not at first apparent because the blood was swallowed. The child became collapsed and blood then flowed from his mouth, and at the same time he vomited about six ounces of it. His nose and mouth were syringed with very hot water and the bleeding at once stopped. The boy gradually rallied.

The bleeding recurred on April 1st, the thirteenth day after the operation, and again in the evening, when a considerable quantity of blood was again vomited. The bleeding on this occasion came from the nose. Mr. Pantin, the house-surgeon, at once removed all the sutures, and plugged the anterior and posterior nares. The pulse was so rapid and feeble that it was considered wise to inject two pints of salt solution at a temperature of 100° F. into a vena comes of the brachial artery, as the superficial veins of the arm were too small to receive the cannula. There was no subsequent bleeding, and the patient was sent to the Convalescent Home at Broadstairs on April 11th He was seen again on May 13th, when the note states that he was in good condition, and that "the hard palate is completely united except for a small portion anteriorly; the soft palate has failed to unite." A small subsequent operation has completed the union of both the hard and the soft palates, and the hare-lip was at the same time repaired.

This case presents many points of interest, and it will be sufficient here to indicate them. The bleeding was unusual, on account of its severity and from its occurrence so long after the operation. It came undoubtedly from one of the larger branches of the posterior or descending palatine artery.

The bleeding, no doubt, stopped spontaneously on each occasion when the child's heart began to fail. The presence of the sutures, however, was sufficient to start the bleeding afresh when the circulation became restored. It was, therefore, only after their removal that a permanent arrest could be anticipated. It is more likely that this supposition is correct than it is to assume that the bleeding was due to a wound of the artery at the time of the operation, for if such had been the case there would almost certainly have been some hæmorrhage immediately after the operation. The practical point which the case appears to bring out is that it would be well to remove the sutures before resorting to more severe methods for the arrest of this form of hæmorrhage after the operation for cleft palate.

Mynter, Herman (Buffalo, N. Y.): Sarcoma of Abdominal Cavity Cured by Toxins of Erysipelas. (*Med. Rec.*, N. Y. 1895, xlvii., 167.)

The patient was a girl, twelve years old. The abdomen was enormously distended and the dyspnœa from this distension was very great. The abdomen was evenly rounded, with dull percussion in lower parts. An indistinct fluctuation was felt by tapping over the whole abdomen. The whole lower part offered more resistance, and an indistinct mass could be flelt in both inguinal regions, and in front extending upward almost to a level with the umbilicus.

An exploratory laporotomy was done on July 22d, 1894, in the presence of a large number of medical men. Free in the abdominal cavity was found about two quarts of a thick, odorless, chocolate-colored fluid, and there was also an inoperable growth involving both the parietal peritoneum, the mesentery, pelvic organs, and cæcum. It was loosened partly from the right inguinal region, and a piece as large as a fist removed; but the bleeding was so terrific and the patient's condition so unfavorable that furtner attempts were out of the question. The abdomen was therefore hurriedly irrigated with sterilized water, the bleeding checked by tamponade with many yards of iodoform gauze, the wound closed, and the pulseless and livid child hurriedly removed to the ward in a dying condition. By active stimulation she revived again; but the case was by all present considered necessarily fatal. The removed piece of tumor had a soft homogeneous appearance, looking very much like white brain tissue, and was microscopically considered sarcomatous.

The injections of the toxins of erysipelas were begun on July 26th, one grain being injected over the upper end of the femur. During the next week large masses of necrotic tissue were discharged through the abdominal wound, the patient began to improve, the tumor began to recede and the abdomen to grow smaller. The improvement continued steadily and on October 4th, there was no trace of the tumor, and the patient was in excellent health.

Spicer, Scanes: A Successful Method of Examining the Larynx and Removing Laryngeal Growths in Very Young, Nervous, or Unmanageable Children. (*Brit. Med. Jour., 1894, ii., 1171.*)

About six years ago a case of chronic hoarseness and stridulous breathing in a child aged 8 years, due to multiple papillomata on the vocal cords, led the author to perfect a procedure, by means of which the larynx could be examined without fail, and laryngeal growths removed.

In laryngoscopy in these children the chief difficulties to be overcome are that the patient, from lack of self-control or terror, is unable to give the observer the assistance given by an adult; but that even if it can be so far managed, involuntary spasm of the pharynx and upper orifice of the larynx blocks the view; or even if the child at first admits of examination either without or with cocainisation, and even an introduction of the forceps, it is unable to stand the necessarily repeated moppings and forceps introduction.

On resorting to general anæthesia with chloroform two difficulties are encountered, in addition to special dangers of chloroform in laryngeal operations. First, unless a very deep degree of narcosis is produced the pharyngeal and laryngeal reflexes are not abolished, and spasm occurs in introducing forceps, etc.; secondly, salivation and the secretion of mucus are inconveniently profuse.

To overcome the first difficulty the author suggests the cautious use of a spray of 10 per cent. cocaine solution, and for the second difficulty the free use of a dry mop of cotton wool. Five assistants are required: No. 1 to give the chloroform, maintaining moderate general anæsthesia; No. 2 holds the child in the usual position for laryngoscopy; No. 3, standing behind the patient, keeps the head erect and square to the operator; No. 4 stands behind and to his right, holding the mouth gag; No. 5 holds the tongue out with forceps. In this way the operator can remove the growth piecemeal, first spraying the larynx with cocaine, then mopping, and finally using the forceps in the usual manner. Dr. Spicer has found the method useful both for examination and for operation.

Bibliography.

Blood Serum Theraphy and Antitoxins, by George E. Krieger, M.D., *Surgeon to the Chicago Hospital, etc., with illustrations.*. (Chicago, E. H. Colegrove & Co., 1895, pp. 68.)

This little monograph gives an excellent outline of the whole subject of serum theraphy.

Obstetric Surgery. By Egbert H. Grandin, M. D., *Obstetric Surgeon to the New York Maternity Hospital; Gynecologist to the French Hospital, etc.;* and **George W. Jarman, M.D.,** *Obstetric Surgeon to the New York Maternity Hospital. Gynecologist to the Cancer Hospital, etc.* With eighty-four illustrations in the text and fifteen photographic plates. pp. IX.—207. (Philadelphia; The F. A. Davis Co., Publishers. London; F. J. Rebman 1894.)

This work is essentially practical on treatment; unquestionably written by men who have taught—who are accustomed to put things plainly and concisely—and yet who sacrifice nothing by few words—a rare faculty.

Modern obstetrics as exemplified by this volume is a great saver of life among children. The unborn child formerly had practically no consideration, but the proper and intelligent performance of the elective accouchment, Cæsarian section, and symphysiotomy have changed all this; by wise selection and careful operation it is no longer necessary to sacrifice either mother or child to save the other.

The stress laid upon asepsis of the accoucher, the genital tract, and the instruments and accessories, shows the importance of cleanliness in all things appertaining to the lying-in woman.

The illustrations are numerous and lucid. The authors are to be congratulated upon producing such a helpful work. F. M. W.

Announcement.

AMERICAN PEDIATRIC SOCIETY.

1632 K STREET,
WASHINGTON, D. C., *March 6, 1895.*

The next meeting of the American Pediatric Society will be held at the Hot Springs of Virginia, May 27, 28 and 29, 1895. This time has been selected so as to afford those who desire it an opportunity to attend sessions of the Association of American Physicians, to be held in this city May 30 to June 1.

During this meeting the Society will be the guests of the management of the Springs, and, judging from the experience of some of our members, an enjoyable sojourn may be confidently anticipated.

The C. & O. Road will arrange to have a special car—probably a special train—leave New York City Sunday afternoon, May 25, for the accommodation of the Society.

The Council, to which is entrusted the preparation of the programme, causes this circular to be issued for the purpose of obtaining the early coöperation of the members. It is to be hoped that titles of papers may be sent immediately, so that the labor of arrangement for a successful meeting may, in this respect, be reduced to a minimum.

The character of the papers largely determines the Society's utility, and it is suggested that papers be confined, as much as possible, to original work, either physiological, clinical, or otherwise, in connection with children. It is also well to bear in mind that literary efforts, pure and simple, do not cause discussion or serve to bring out the views of the various members. It is fair to premise that men, daily dealing with sick children, most of them teachers, are sufficiently versed in the history of their subject to make it unnecessary for the essayist to begin at the egg. If found necessary, historical remarks can be published with the papers, so that the general public may reap the benefit of erudite research.

The Council has decided upon the following subjects for discussion :

I. Antitoxin in diphtheria, especially.

(*a*) The results in laryngeal cases.

(*b*) The cause of death in fatal cases.

(*c*) Efficiency for the purpose of giving immunity.

II. The characteristic features of the recent epidemic of grippe, 1894–'5.

(*a*) Pulmonary manifestations.

(*b*) Aural "

(*c*) Glandular "

III. The different forms of eruption which simulate scarlet fever, and their differential diagnosis.

The Council desires that, as far as possible, the above subjects be kept in mind in preparing papers, although communications on other subjects will, of course, be gladly received.

All communications relative to the meeting should be sent to the Secretary.

Signed, on behalf of the Council,

F. FORCHHEIMER, M.D.,
President.

SAMUEL S. ADAMS, M.D.,
Secretary.

Treatment of Stye.—A solution of fifteen grains of boracic acid to the ounce of water, applied three times a day with a camel's hair brush, is said to be very efficacious.—*Brooklyn Med. Journal*, 1895, ix., 174.

Insect Bites :—

Ammonia water	45 minims.
Collodion......................	15 minims.
Salicylic acid..................	1½ gr.

S.—One drop to be applied to each spot affected.—*Med. and Surg. Rep.*, 1895, lxxii., 354.

ARCHIVES OF PEDIATRICS.

VOL. XII.] MAY, 1895. [No. 5.

Original Communications.

SOME PHYSIOLOGICAL FACTORS OF THE NEUROSES OF CHILDHOOD.

BY B. K. RACHFORD, M.D.,

Clinician to Children's Clinic, Medical College of Ohio, Cincinnati, Ohio.

(*Continued from p. 269.*)

VI.

Blood Changes.

The qualitative and quantitative changes in blood supplying nervous tissues are, from a clinical standpoint, the most important causes of the neuroses of childhood. The importance of blood changes as a cause of neurotic disease depends, not only upon the fact that they are most potent factors, but more because they are factors which can, as a rule, be removed by treatment, and, as clinicians we are especially interested in the remediable causes of disease.

For convenience of study, one may say that there are three important blood changes related to neurotic disease.

1st. The presence of bacterial or other toxines in the blood.

2d. A venous condition of the blood.

3d. An impoverished condition of the blood.

The above-named blood changes do not, as a rule, exist as separate pathological conditions; but should rather be considered as factors of that complex blood condition which is called "Chronic Anæmia," and which is so commonly etiologically related to the neuroses of childhood.

The above classification therefore, is given only that it may furnish topics for discussion.

Bacterial Toxines.

We have every reason to believe that bacterial toxines, resulting from chronic microbic infection, play an important role in the etiology of the neuroses of childhood.

We know that many bacterial poisons, such for example as the toxines of tuberculosis, tetanus, diphtheria, and typhoid fever, can produce by their direct action on nerve elements, most profound nervous symptoms, and this fact demonstrated by laboratory experiments finds ample corroboration in every day clinical observations. Clinicians now very generally believe that the nervous symptoms of the acute microbic diseases are in great part due to the action of bacterial toxines on the nervous system.

But in our present study, we are not so much interested in these acute intoxications as we are in the chronic blood intoxications, which result from such chronic microbic diseases as tuberculosis, malaria, summer complaint, rheumatism and syphilis, since these are the diseases which I have elsewhere* shown to be so intimately associated with the neuroses of childhood. Chronic glandular tuberculosis* is, of all diseases, the most intimately associated with the neuroses of childhood.

Hysteria, incontinence of urine, night terrors, chorea, and other neuroses, are very commonly associated with tuberculosis in childhood, and these nervous symptoms are under these conditions best relieved by treating the tuberculous condition. How is tuberculosis etiologically related to these neuroses.* We know that the tubercle bacillus produces a toxine, which when introduced into the body, causes very marked nervous symptoms, the inference therefore is unavoidable that this tuberculous toxine is a factor of that complex blood condition which results from chronic tuberculosis and which is etiologically related to many of the neuroses of childhood.

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* Tuberculous Neuroses of Childhood—ARCHIVES OF PEDIATRICS, May, 1893.

Chronic malaria is etiologically closely related to the neuroses of childhood, and this relationship is no doubt, in part, due to the production of nervous symptoms by malarial toxines. It has been demonstrated that toxic substances are produced in malarial disease, and that these substances are eliminated in large quantities in the urine during a malarial paroxysm, and what is of more importance to us in our present study is that it has been proven that the urine in chronic malaria is at all times more toxic than normal urine. These malarial toxines, eliminated in the urine, when injected into the veins of animals, will produce well-marked nervous symptoms. These experiments corroborate the well grounded clinical belief that the many neuroses of childhood so commonly associated with chronic malarial diseases are, at least in part, due to the direct action of malarial toxines on the nervous tissues, and they also afford an explanation for the fact that such neuroses as neuralgia, night sweats, hysteria, incontinence of urine, night terrors and chorea are occasionally cured by the specific treatment for malaria, viz., quinine and arsenic.

Chronic intestinal fermentation is very frequently etiologically related to the neuroses of childhood, and there can be no doubt but that intestinal toxæmia is one of the links which unite these two conditions. There is perhaps no fact better established by experimental and clinical medicine, than that very active poison capable of producing the most violent nervous symptoms, can be produced by a putrid fermentation of albumous material, either within or without the intestinal canal. These acute intestinal intoxications are the most violent and dangerous of all the neuroses. But in this study I wish especially to call attention to *chronic* intestinal toxæmia as a cause of neurotic disease in childhood, the continued absorption from day to day of small quantities of bacterial toxines from the intestinal canal, is a very important and much underestimated cause of neurotic disease in children.

Chronic intestinal toxæmia in childhood is, as it is in adult life, very commonly associated with constipation. If this fact is kept in mind we will often be able to cure hysteria, night terrors, neurasthenia and the convulsive neuroses by diet, cathartics and intestinal antisepsis. An important fact not to be forgotten in this connection, is that the toxæmia is not the only change in the blood resulting from chronic intestinal fermentation which is etiologically related to neurotic disease.

Rheumatism and syphilis are also closely related to neurotic disease in children, and it is not improbable that bacterial toxines in each of these diseases may have something to do with producing the nervous symptoms.

In the above outline I have called attention to the importance of bacterial toxines as factors in producing the long chain of neuroses so commonly associated with chronic microbic diseases, but I wish to emphasize the fact that these bacterial toxines are not the sole cause, and often not the chief cause of the nervous symptoms in these diseases.

Auto-Intoxication.

Auto-intoxication is an important and little understood cause of neurotic disease in children. The poisons of this class are not of microbic origin, but are produced in the tissue changes incident to retrograde tissue metamorphosis. They are for the most part, bodies which are normally produced in the body in such quantities that they can readily be eliminated by the kidneys, liver, lungs, and other excretory organs ; in this way these bodies are excreted as rapidly as they are formed, so that under normal conditions they do not accumulate in sufficient quantities to produce nervous symptoms. But in certain pathological conditions they become important factors in the production of nervous disease, either because of their increased production or deficient elimination. But the whole field of the relation of auto-intoxication to nervous disorders is so confused and so full of misinformation that it seems almost presumptuous to write upon it. But there is one phase of this subject upon which I wish to speak and speak emphatically, and that is the relation of the uric acid diathesis to nervous diseases. At the present time there is no fallacy so deeply rooted in the medical mind, as that uric acid and urea can by their direct action on the nervous centres produce nervous disease. This belief has been so firmly fixed in the medical mind that it was considered almost too trite a fact for medical discussion, and even now it seems almost heresy to proclaim that uric acid and urea do not produce nervous symptoms, since the ingenious theory of Haig, that migraine and kindred nervous disorders are commonly due to an excess of uric acid in the blood, is now very generally accepted by the profession. In the field of pediatrics we have blamed uric acid with causing paroxysmal gastric neuroses, migraine, convulsive disorders, and other neurotic diseases, while against urea has been charged certain convulsive symptoms. But I wish here to emphasize the fact that both urea and uric acid have in this regard been falsely accused, and convicted upon circumstantial evidence. They are innocent, non-poisonous bodies, and not capable of producing the severe nervous symptoms which accompany the excessive elimination of uric acid and the diminished elimination of urea.

Bouchard injected experimentally in the blood thirty centigrams of uric acid for each killogram of animal without apparent injury. In one instance he injected sixty-four centigrams for each killogram of animal without injury to the animal.

Roberts says, "uric acid and its compounds are deleterious simply because of their sparing solubility in the body media." In fact, all experimental evidence is opposed to the idea that uric acid or its compounds can in any other than a mechanical way produce nervous symptoms. Uric acid has been accused and convicted ot producing certain nervous disorders on the circumstantial evidence that it was present in excess in the urine immediately before, during, or after an attack of these diseases.

But its innocence is now thoroughly well established, and the same may also be said of urea. And in the light of our present knowledge, we can only consider the increase of uric acid and the diminution of urea in the urine as valuable signs, indicating the approach or presence of, a nervous attack due in all probability to auto-intoxication, but of which they are entirely innocent.

The cause of the gastric neuroses, neurasthenia, migraine and convulsive disorders which occur in the uric acid diathesis, and which are marked by an increase of uric acid and a decrease of urea in the urine, must be sought in some of the poisonous products of retrograde tissue metamorphosis.

What are these poisonous products? The answer to this question opens up a wide field in experimental pathology yet to be investigated. Bouchard's work on the poisons found in normal urine has a bearing on this question. He found that potash salts, the coloring matters, and other unnamed products in normal urine were poisonous, and he therefore concluded that these bodies by their presence in excess in the urine might be factors of auto-intoxication. But he does not determine under what conditions these poisons may occur in excess in the blood and urine, and altogether, his work on auto-intoxication is too general, and his findings too vague to be of real service to the clinician; more accurate and careful work must be done in this field, before we can assert that the poisonous bodies spoken of by Bouchard have anything to do with the nervous symptoms of the uric acid diathesis.

In this connection, I wish now to ask attention to my own work on the influence of paraxanthin and other leucomaines of the uric acid group, in producing the nervous symptoms which have heretofore been attributed to uric acid. In the *Medical News* (Philadelphia, 1894), I published two papers, in which I demonstrated that paraxanthin, a poisonous leucomaine of the uric acid group, was in part responsible for the nervous symptoms associated with the uric acid diathesis. In a case of migraine and one of migrainous epilepsy, I demonstrated that the urine in these diseases passed during a paroxysm contained a comparatively large quantity of paraxanthin, and I further demonstrated that the paraxanthin solution thus obtained, would produce in mice symptoms similar to those from which my patients suffered. In these cases in which I demonstrated the presence, in the urine, of a large excess of paraxanthin, I also found that the urine contained an excess of uric acid and a diminished quantity of urea. In brief, these cases were types of the uric acid cases described by Haig and other writers, and it is reasonable to conclude from my experiments, that their nervous symptoms were due to paraxanthin and other leucomaines of the uric acid group, rather than to the non-poisonous uric acid which was also present in excess in the urine of these cases. Leucomaine poisoning would be an appropriate name for this particular type of auto-intoxication.

From my researches I conclude there are three more or less distinct types of leucomaine poisoning, viz.: gastric neurosis, migraine, and migranious epilepsy. The gastric neurosis and migraine of loucomaine origin are not uncommon in childhood, while migranious epilepsy is probably a disease of adult life. Attacks of migraine may alternate, in the same individual, with attacks of gastric neurosis or with attacks of migranious epilepsy; in each instance the attack is sudden in its onset, and after continuing for a variable length of time, it is rapid in its convalescence.

VII.

Blood Changes (Continued.)

(A) VENOUS CONDITION OF THE BLOOD.

It is a striking fact that the nervous symptoms resulting from a venous condition of the blood, supplying nervous centres, are quite the same as the symptoms produced by an arterial anæmia of the same centres, due to a complete or partial closure of the arteries supplying these centres. The reasons for this are plain, since following the ligation of arteries we have not only an arterial anæmia of the nervous centres, but also a compensatory venous congestion, so that in both artificial venous congestion and arterial anæmia we have the nerve centres bathed in venous blood.

It is thought by Landois and Sterling "that the stimulation of the nervous centres which results from the ligation of arteries, is due to the sudden interruption of the normal exchanges of gases between blood and tissues." But it must be remembered that a venous condition of the blood means not only a decrease of O, and increase of CO_2, but it also means more urea, more uric acid and more of all the effete products of retrograde tissue metamorphosis. That is to say, that the nervous tissues are not only, deprived in part of all these substances which are necessary for their nutrition and healthful action but they are also exposed to the irritating and poisonous influence of the effete products previously noted. It seems therefore a safer explanation of the symptoms, which result from experimental arterial anæmia or venous congestion of nervous centres, to say that they are caused not only by an interruption in the normal exchange of all substances, necessary to the nutrition and healthful action of nerve tissues, but also by the presence in the blood of CO_2 and other effete and poisonous products.

In this connection we may note the following physiological facts concerning the influence of the above-named blood conditions on important nerve centres.

A venous condition of the blood in the medulla oblongata will stimulate the vaso-motor centres and cause constriction of the small arteries ; this has been thought to be due to the direct stimulation of the centres by CO_2 (Landois and Sterling). The same result may also be produced by an arterial anæmia of these centres due to ligation of arteries.

In the medulla oblongata there is a centre whose stimulation causes general spasms. This centre may be excited either by a venous congestion or an arterial anæmia of the medulla oblongata.

The respiratory centre may also be excited by either a venous condition of the blood or by an arterial anæmia.

Lauder Brunton cites the following experiment to show the relation existing between convulsive movements, and a venous condition of the blood, supplying nervous centres. "In fowls killed by Cobra poison the convulsions came on at the moment the comb becomes livid, and when artificial respiration is begun, the convulsions disappear as the comb again regains its normal color." Brunton believes this to be an instance of asphyxial convulsions, due to irritation of the higher brain centres, thus diminishing their coördinating or inhibiting action on the lower centres of the cord. He also says that "drugs which stimulate the circulation and increase the nutrition of the higher nerve centres, in this way strengthen their coördinating power and tend to prevent spasm ; alcohol and ether act in this way." That this weakening of the inhibitory power of the brain and medulla oblongata may result from arterial anæmia as well as from venous congestion is shown by the following experiment.

If the arteries going to the brain be ligatured so as to paralyze the medulla oblongata, then, on ligaturing the abdominal aorta, spasms of the lower limbs occur, owing to the anæmic stimulation of the motor ganglia of the spinal cord, (Sigm. Meyer). That the anæmic condition of the cord produced by ligaturing the abdominal aorta is incapable of producing spasms, when the medulla oblongata is in normal condition, is a striking example of the inhibitory influence of the oblongata centres on the motor centres of the cord.

V. Aducco made a series of valuable experiments on dogs. He produced anæmia of the nervous centres by cutting off a portion of the blood supply from the spinal motor centres. He compared the excitability of these centres before and after the artificial anæmia thus produced, and in this way he determined, "the effect that partial anæmia exercised on the motor centres of the cord."

Aducco concludes his paper as follows: "The researches I have just described have led me to draw the following conclusions: in anæmia, that is to say when the flow of blood is diminished, the active materials of the nerve centres are found in a state of great excitability. In this condition, excitants from the exterior act much more energetically than in the normal condition, and this state of excitability increases, very probably, during the entire duration of the anæmia. It seems to me that one should, within certain limits, admit that there is an inverse relation between nutrition and the excitability of the nerve elements. This latter augments during the time that the nutrition diminishes."

In these conclusions, Aducco wrongly interprets artificial arterial anæmia to mean a *simple innutrition*, and concludes that the excitability of the nervous centres is due to this innutrition rather than to the numerous blood changes which we have previously shown to accompany arterial anæmia.

I have repeated Aducco's experiments and quite agree with him that the excitability of the nervous centres increases with the duration of the arterial anæmia; but I have also shown by a series of experiments, made upon rabbits and dogs, that the complete closure of the veins, returning the blood from the spinal motor centres, will produce the same symptoms, that are produced by the ligature of the arteries supplying the same spinal centres.

In these experiments, I studied the increase in the electrical excitability in the muscles of the hind legs as well as the increase in the reflex excitability of these parts; and always obtained practically the same results from ligatures of arteries as from ligatures of veins supplying the same nervous centres.

From the observations cited in this chapter, the following inferences may be made:

1st. Both arterial anæmia and venous congestion can produce an excitable condition of the nerve centres and may therefore be factors in the production of nervous symptoms.

2d. The nervous symptoms resulting from arterial anæmia are very similar to those resulting from venous congestion, and this is because in both conditions there is a venous condition of the blood supplying the nerve centres.

3d. Arterial anæmia and venous congestion produce nervous symptoms by producing a *malnutrition* rather than a simple *innutrition* of the nerve centres.

4th. Arterial anæmia and venous congestion weaken the inhibitory centres, and this results in the discharge of force from reflex centres on comparatively slight excitation.

5th. Arterial anæmia and venous congestion make more excitable both the reflex centres in the cord, and the more important reflex centres in the medulla oblongata.

The above outline will be of assistance in explaining many obscure nervous symptoms, and the following examples may be cited to indicate the important relationship existing between a venous condition of the blood and the neuroses of childhood.

1. The venous condition of the blood resulting from a weak or crippled heart, is at least a partial explanation of the relationship which exists between this condition of the heart and certain neuroses such as chorea, hysteria and general nervous irritability.

2. Rheumatism, scarlet fever, diphtheria, and other acute diseases which oftimes produce, a weakened condition of the heart, may in this way be indirect factors of neurotic disease (from what has been said in the previous chapter, it is scarcely necessary here to note that these diseases may also act in another way in producing nervous symptoms).

3. Tuberculosis, chronic intestinal catarrh, and other diseases that produce a profound chronic anæmia and resulting malnutrition of the nervous centres may be powerful factors in producing many of the neuroses, such for example as hysteria, incontinence of urine, chorea, and spasm.

THE USE OF ALCOHOL IN SICK CHILDREN. *

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Mr. Chairman. When requesting me to express my views on the use of alcohol in sick children, you reminded me of a paper I read on the same subject at the meeting of the American Pediatric Society in 1890. A perusal of this article elicited the fact, that while the general tendency of the ideas expressed therein had since been supported by eminent authorities like *Demme*, and *Strümpell*, my own growing experience during these last five years had so added to my practical knowledge of this subject, that a further modification of my former views does not appear to me so entirely out of place after all.

While *Demme* in his classical study on "The Influence of Alcohol upon the Organism of the Child," published in 1891, has given a review of all the possibilities of chronic alcoholic poisoning in children, he only alludes to its use at the bedside, by expressing the wish that it may there, never be entirely suppressed. Strümpell's masterly paper, read in September of 1893, at the 65th annual meeting of German Physicians, "On the Alcohol Question from the Medical Point of View," points out the pathological changes caused by the habitual moderate use of alcohol in adults, but alludes to children in only a cursory manner; and though an excellent medical sermon preached to German physicians upon the evils of the beer-drinking habit of the Teutonic race, no precise statements as to when and where alcohol should be employed is found therein any more than in Demme's work.

If I therefore to-night attempt to describe some of the conditions in sick children where alchohol may, and may not be of use, I do so with the distinct understanding that in the future the number of these indications may be changed, and that the opinions expressed are (like those in my first paper) strictly my own, and therefore open to criticism to all who may think otherwise.

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1. **Gastro-Enteritis.** In an article on "Acute Gastritis in Infants," published in 1884, in the *Yahrbuch für Kinderheil Kunde*," I pointed out the necessity of forbidding the drinking of beer to mothers nursing infants suffering from gastro-enteritis. In my paper alluded to above, published five years ago, I said: "*We can exclude all forms of gastro-intestinal disturbances in children from the list of diseases where alcohol is beneficial.* In acute cases, even in cholera infantum, large quantities of water and smaller ones of black coffee or tea, will stimulate more than any quantity or quality of alcohol, besides, not irritating the mucous membrane, already in a diseased condition."

Six years ago, in an article on the "Mechanical Treatment of Gastro-Enteritis in Children" (*Medic. Monatsschrift*, 1889), I pointed out the fact that the only rational course for the therapeutist to pursue in these cases was, to rid the alimentary canal as soon as possible of its bacterial invasion, and to stimulate by supplying the blood and the tissues with large quantities of water. *Epstein*, in 1891, (Festschrift to Prof. Henoch) arrived at the same conclusions, and to-day this indication is universally recognized. To attempt the stimulation of such patients with alcohol, after cleansing the alimentary canal is superfluous, but to give alcohol to enteritic children, while yet the decomposing milk remains in the intestine, and the development of bacteria is perhaps supported by the constant supply of milk given to the child, is irrational and harmful.

2. **Typhoid.**—In connection with all the varieties of acute and chronic gastro-enteritis (from the most intense form of cholera infantum down to the mildest type of dyspepsia), we had better here dispose of the possible use of alcohol in the *typhoid* of children. Brown's theory of

sthenia and asthenia, and Todd's teachings had spread the alcohol treatment of typhoid fever from England all over Christendom. Enormous quantities were given. Demme tells us, "that it was not unusual to give two to three bottles of strong red wine in addition to large quantities of champagne and cognac to an adult in the course of twenty-four hours; sometimes a quart of cognac was given daily."

I have used alcohol in typhoid patients, children and adults, in private and in hospital practice during the last seven years only in emergencies. Ninety-five per cent. of my patients never taste it. Even during convalescence, alcohol can only retard and impare the digestive ability of the stomach by causing catarrh and decreasing its motion, and thereby giving rise to abnormal bacterial activity in spite of hydrochloric acid, as *Kaufmann*, of New York, has recently shown (*Berl. Klin. Woch.*, Feb., 1895), and this at a time when this organ is again expected to perform more work, after just having been weakened by the disease and possibly the medicines of the physician.

As typhoid usually runs a mild course in children and collapse will hardly ever be observed, if but the proper diet is adhered to, we may safely say that alcohol ought not to be given to typhoidal children, as it will increase gastric and intestinal fermentation and so the systemic infection. Alcohol does not disinfect the alimentary canal any more than the blood, as modern bacteriological research has demonstrated. As an antipyretic in typhoid, alcohol has at no time been taken seriously by any physicians of note since clinical thermometers are in use, and its sedative action can be much better brought about by safer remedies.

3. In **fibrinous** and **broncho-pneumonia** in children alcohol has been given in enormous quantities, and it has become a habit with some of us to occasionally point with pride "at the very large quantity of alcohol which young children tolerate during pneumonia." As to this "toleration" I will here ask, "what could these little

sufferers do but to tolerate this abuse?" I am sure they would have protested if they had been older instead of "young" children. This idea to make up for the small size of the patient, by the large size of the whiskey-bottle, was based upon our ignorance as to the true cause of heart weakness in catarrhal and croupous pneumonia. Klemperer and his brother and others have isolated the toxines of some varieties of pneumonia, and have demonstrated their destructive action upon the nerve centres.

I do not use alcohol in pneumonic children at all, as long as they are willing to swallow cold water, tea, coffee and broths. In a collapse threatening or present, I do use it, in good doses and in concentrated form, but I hold that we can *not* prevent heart failure not yet in evidence, by the regular administration of small or large quantities of alcohol. On the contrary, I am convinced that by regularly bringing this quick-acting poison in contact with the stomach and the nerve-centres, we cause pathological conditions well known to us in the healthy child after drinking liquor, but which we do not recognize in the patient, partly because the symptoms of the disease disguise them, and partly because we are blinded by our own success in increasing the volume of the pulse (due to vaso motor paralysis), to see the harm we do.

An alcohol-fed child will *digest* still less during pneumonia than one who's stomach is not constantly insulted in this way. So it is in healthy children, and so it is in sick children, but the damage done in the latter is by far the greater. The idea that the toxines of pneumonia counteract the alcohol so as to destroy its toxic effects, and to leave only its benificent properties, is one of those many pious grey theories, ripe and ready to be thrown into the large waste-paper basket of modern medical knowledge.

Alcohol-fed pneumonic children do not regain their appetite and digestive power after the attack is over, as others treated without it, for the resulting gastritis will as surely then be in evidence as the one in the adult male, who returns from a protracted spree. The anaemia and malnutrition must therefore be increased by the alcohol treatment, aside of the nervousness, due to destroyed nerve-tissue, and the ultimate complete recovery to the normal state must be prolonged.

Insufficiency of the heart's action in pneumonia in children is due to the destructive action of the absorbed toxines upon the nerve tissue, and to insufficient oxydation of the blood, *ergo* carbonic acid gas poisoning. Against the latter, a constant supply of fresh, cool air (irrespective of the time-honored 70° F. temperature of the sick-room), will guard well in most cases; against the action of the toxines we are practically powerless. Alcohol does not decrease the strength of the toxines in the blood any more than in the test-tube, and we have good cause to infer that the blood can come up to the emergency much better, without its vitality and reactive power in producing anti-toxines being interfered with by alcohol.

The nerve tissues, peripheral and central, are *never* benefited by alcohol. Destruction of nerve tissue is the well-recognized mission of all alcohol brought into the system, even in repeated small doses, as Strümpell has shown. And what about the reaction following each exciting dose? Depression, in exact proportion to the amount of alcohol taken, follows in every instance in the healthy human body, and also during pneumonia, leaving the nerve-centres guarding the heart's action certainly not in an improved condition. Abundant clinical experience, added to known pathological facts, therefore, have induced me to use alcohol in pneumonic children only in occasional emergencies, where smaller doses will do more good and less harm.

4. In **scarlatina** alcohol is not tolerated by the stomach at all during the first few days, as nausea usually teaches us. In malignant cases, causing destruction of blood-cells and death in from six to forty-eight hours, I have never seen the slightest improvement, even when large doses of ether and alcohol were given hypodermically. In mild cases, without pharyngeal necrosis, alcohol is en-

tirely out of place, as well as in *measles;* as the hyperæmia of the cutaneous capillaries by partial paralysis of the vaso-motor nerves (from which cause we notice the flushed face of the drinker) can only be increased, adding to the distress of the child, and the better accommodation of the bacteria in the skin.

In septic conditions during scarlatina, induced by absorption from the pharyngeal necrotic tissue into the cervical lymph-nodes and the general circulation, now and then causing abscess, a judicious dose of light wine, or whiskey in water, appears to be of benefit, relieving pain and insomnia. It is my habit to give coffee, tea, cocoa and camphor during daytime, and a fair dose of alcohol at night, so as to somewhat subdue the excitement and restlessness, caused by necessary irrigations of the upper air-passages. With such a night-cap, combined with a carefully selected dose of an antipyrine solution, (this given per rectum.) I have produced refreshing sleep, but often when gastro-intestinal disturbance caused me to abandon its use again, the children seemed not to be the worse for its want.

Some fourteen years ago I treated a boy of six years, for two months, during a severe attack of septic scarlatina. His father kept a wine shop and alcohol was freely given. Four weeks after my last visit I found the little fellow suffering from a peculiar form of gastritis, allowing him to eat well, but also compelling him to leave the table and to vomit up all of the food taken. He confided to me the secret that he had formed the habit of not alone taking all the wine given to him, but also to help himself to extra drinks whenever no one was near. A speedy removal to a temperance boarding house in the Orange Mountains promptly cured him of his alcoholic gastritis.

5. In **diphtheria** the free use of alcohol has been universal. The enormous mortality of about 40 per cent., in places supplied with the best medical talent, like London, Paris, Berlin and New York, does not exactly speak for its value in this ailment. In mild cases I have not

used it at all for years, and I doubt very much whether my patients suffering from severe attacks (showing general invasion of the naso-pharyngeal cavity from the start), derived any benefit from the large doses I gave them. The diphtheric paralysis caused by the toxin of the Loeffler bacilli can certainly not be prevented by alcohol, no matter how much is given, but that we may assist a myo-carditic heart-muscle to do its work, is piously believed by many. I doubt it, and considering that Strümpell claims to have seen degeneration of the myocardium from habitual moderate doses of alcohol, we may ask if not possibly large doses at least aid the diphtheria virus in increasing degeneration here, where we expected to help instead of to hinder? Certainly an open question, waiting for investigation.

So far I have given alcohol in diphtheria whenever the heart seemed to give out, but then in large doses and only for a day or two. Frequent small doses may pave the way for the toxines into nerve-tissue by aiding in attacking their structure. I have given a strong man, on the third day of a virulent attack of gangrenous diphtheria, when his pulse was 140 and his rectal temperature 96° F., a full quart of French cognac in twenty-four hours, after which time his pulse fell to 120 and his temperature rose to 104.5° F., but no more after this; and a girl of six with a rectal temperature of 97° F. and a pulse of 138 on the fifth day of a severe attack of diphtheria, half a pint of rye whiskey in twelve hours, and they both recovered, and I fondly hope that this treatment saved their lives, but my scepticism does not permit me to assert this, because thorough local treatment (which had not been used till then), certainly stopped the further spreading of the local affection, and possibly the antitoxines developed in the blood in spite of the alcohol, did the rest. In twenty-seven cases of diphtheria seen by me since Dec. 1, 1894, and treated by Behring's serum, among which were five with laryngeal infection, alcohol was given to one child of eleven months, and this was the only one that died.

As most cases of diphtheria are mixed infections, caused by different varieties of bacteria associated with the Loeffler bacilli, we still may assume that heart weakness may be caused by some of the other germs, and therefore I do give large doses of alcohol in such emergencies, but only temporarily.

6. In **nephritis** alcohol can only do harm in large doses. Strümpell insists that acute alcoholic nephritis exists as well as chronic. Alcohol has a strong action on the epithelial cells of the kidneys, and therefore may occasionally be used to advantage in emergencies. Light beer has served me well in a few cases. On Jan. 1, 1894, I was called to intubate a girl of five, then ill with "sore throat" for a week. A culture showed Loeffler bacilli. Two days later the child had a sudden convulsion and the temperature rose to 105° F. During the next twenty-four hours but one tablespoonful of bloody urine was passed. Nausea caused the child to even throw up cold water. Diuretin per rectum had no effect. In desperation I offered her beer, which she had never before tasted. She took it, retained it and lived on it for two days. Urine came and slowly improved. On the third day she took buttermilk, later on, milk, and she made a slow but complete recovery. Albumen persisted for a month, blood was found for two weeks. She was given no more alcohol after she took the buttermilk.

Knowing the effect of large doses of alcohol on the healthy kidney epithelium, and knowing the frequency of diphtheric nephritis (to which knowledge the profession at large seems to have been helped but recently, through the introduction of the antitoxin), we may well ask if routine alcoholisation in diphtheria may not cause great mischief? In the nephritis almost invariably accompanying severe gastro-enteritis in young children, usually never looked for, alcohol is out of place, as well as in post-scarlatinal nephritis.

In conclusion, I believe that the amount of alcohol given to sick children by physicians (aside of occasional emergencies few and far between), is in direct proportion to their ignorance of the proper dietetic and hygienic management that their little patients are in need of.

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WHAT SHALL A GENERAL PRACTITIONER DO FOR AN ACUTE OTITIS?

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A more intelligent understanding of those measures which lie at the command of a general practitioner in dealing with the disease in question, can perhaps be arrived at by considering just those resources which are to be adopted for the relief of the symptoms which the disease causes. The symptoms which most prominently present are first, pain in the ear; and second, discharge from the ear. A word of caution here may not be out of place from the fact that children occasionally complain of aural pain when the ear is perfectly nermal, the pain being neuralgic in character and due to dental caries. It is to be suggested therefore, that in children over two years of age, that the practitioner first examine the mouth to see if any carious teeth are present, unless he is sufficiently versed in otoscopy to determine the aural condition directly.

When the pain is due to inflammation either of the external auditory meatus, or of the middle ear, and the patient is seen in the early stages of the attack, the physician should attempt to abort the inflammation as well as to relieve the symptoms. The most efficient measure for aborting the attack is undoubtedly the local abstraction of blood. In very young children either wet cupping or the use of natural leeches is difficult, although the cup can be applied if the child is firmly held, and if the physician does not possess enough confidence in himself to manipulate instruments in the external auditory canal, it is certainly wise to employ local depletion. The region selected for the application either of the wet cup or of leeches, is that lying close to and immediately in front of the tragus. From half an ounce to one and a half ounces of blood may be withdrawn in this region, and in many cases the measure is beneficial. The patient should be kept in bed and a free catharsis instituted. If the case is seen very early, it is frequently wise to follow the abstraction of blood by the administration of an opiate sufficiently powerful to quiet the patient for five or six hours, in the hope that depletion and absolute rest for several hours may abort the attack. For the further relief of pain the use of heat about the ear is a means at the disposal of all, and is certainly valuable, either after local depletion, or where this measure is not deemed advisable. The most convenient method of employing dry heat is by means of the Japanese pocket stove; the hot water bag, although less convenient is equally efficacious. Where these are not available, a stove lid, a flat-iron or a brick previously heated, wrapped in a piece of flannel and placed under the pillow will supply the place of the more convenient apparatus above described. In order that the heat may be applied more directly, I occasionally recommend that a small hot salt bag be introduced into the meatus, heat being applied externally by means of the hot water bag or other device as stated before. These salt bags are conveniently made by cutting off the finger tips of a kid glove, filling the tips with salt and placing them upon a hot plate until they are thorougly heated, after which they are placed just within the meatus and heat is applied externally as already described.

If there is one point we should emphasize more than another, it is that under no circumstances is any oily substance to be introduced into the meatus. The old practice of dropping warm sweet oil, or a mixture of sweet oil and laudanum into the external auditory canal for the relief of otalgia, is a relic of barbarism that deserves no place in modern medicine.

I am not inclined to favor the use of moist heat in the early stages of an acute otitis, consequently the irrigation of the canal with warm water, or the application of poultices to the ear, the canal being previously filled with water, are not, I think, measures to be advised. Moist heat softens the tissues and encourages their disintegration, while our efforts in the early stages should be directed towards aborting the inflammation. Heat is employed in the early stages simply for the relief of pain, and dry heat does not encourage suppuration, while moist heat certainly favors it.

If after the effects of the opiate have disappeared the pain reappears, it is unwise to administer a second dose, as it will only mask the symptoms. The local abstraction of blood and the application of dry heat are then the only resources at the command of the physician, previous to the appearance of discharge from the ear, unless he is able to use the head mirror and inspect the parts affected.

After discharge has made its appearance frequent irrigation of the external meatus by means of a weak antiseptic solution, such as a solution of the bichloride of mercury 1 to 5000, or of carbolic acid 1 to 100, or a saturated solution of boracic acid, is the best measure for combatting the inflammatory process, and for preventing its extension to the neighboring bony parts. In many of these cases the discharge is serous in character and will continue so unless it is infected as it lies in the external auditory canal. All that is needed is to keep the meatus perfectly clean and prevent infection of the discharge. It is unwise to stop the meatus with cotton, or to keep the ear covered, as in this way local infection of the canal is liable to occur, causing either circumscribed or diffuse inflammation. While the ear is discharging, considerable relief may sometimes be obtained by filling the meatus with warm water and applying heat externally, a poultice covering the auricle, however, is not necessary and causes so much maceration of the integument as to constitute a disadvantage; if the canal is filled with water and dry heat is applied externally, we have the beneficial action of the heat and moisture upon the parts affected without inflicting any injury upon the auricle.

After the acute symptoms have subsided certain measures directed towards checking the discharge may seem necessary. It must be remembered that under no condition should any attempt be made to diminish the quantity of the discharge until the temperature becomes normal and all pain has disappeared. In the large proportion of cases where spontaneous rupture of the drum membrane has taken place, if the parts are kept carefully cleansed in the manner previously described, the discharge will cease spontaneously; in a small proportion of cases it continues. The use of astringent instillations cannot, I think, be commended. In cases where the discharge persists, it is perfectly safe to use a saturated solution of boric acid in alcohol, as an instillation after syringing. A few drops of this solution introduced into the meatus by means of the medicine dropper, after previous careful syringeing, may be employed with perfect safety and is usually sufficient to stop the discharge. The objection to solutions of sulphate of zinc and other kindred instillations, is that they form an excellent nidus for the development of vegetable parasites, and unless the physician can inspect the parts and watch the effect of the application intelligently, they possess no advantage over the alcoholic solution of boric acid.

To recapitulate then, the measures at the service of one who is unwilling to trust to his skill in otoscopic examination, will be comprised under local depletion and dry heat before the appearance of discharge; and local depletion and moist heat with frequent irrigation, after the appearance of discharge. Extension to the bony parts, as indicated by tenderness upon pressure behind the ear, is to be combatted by the use of the ice coil or the ice bag to the mastoid process, the frequent irrigation of the canal being continued. The cold applications should not be used for longer than forty-eight hours—after this they simply mask the symptoms.

Where an otoscopic examination has been made, the appearance of the parts involved frequently causes us to modify our treatment, and at the present day very few practitioners are incompetent to make such an examination and to be guided by it. The local depletion and dry heat are always perfectly safe in the early stages. If these fail to relieve the pain, it is wise under all circumstances to evacuate any collection of fluid which may have formed, or to still further deplete the parts by incision if inflammatory effusion has not yet taken place. It is much better to do this than to wait for spontaneous perforation of the drum membrane.

As the present remarks have to do particularly with otitis in young children, a few remarks concerning the technique of otoscopy in infants will not be out of place. It is to be remembered that in the infant at birth the superior and inferior walls of the meatus are in contact, that the superior wall lies immediately upon the external surface of the squamous portion of the temporal bone, and that the membrani tympani constitutes a prolongation or extension of this superior wall. As development advances the bony meatus is formed, during which process the inferior wall becomes separated from the superior in the deeper portion of the meatus. In infants therefore, in order to expose the membrani tympani it is necessary to draw the auricle downward, backward and outward before inserting the speculum, and after this instrument is in position, to direct the eye upward to the superior wall of the meatus and follow this to its inner extremity, in order to inspect the membrani tympani. Such an inspection is not difficult, and a little practice enables anyone to make it.

Any tumefaction within the external canal whether it constitutes an external otitis limited to the canal wall, or is caused by an accumulation of fluid behind the drum membrane, or by swelling of the tissue in the vault of the tympanum, demands incision, if previous depletion and dry heat have not relieved the pain. I am strongly in favor of an early incision in acute otitis media in order to cut short the inflammatory process and to prevent the formation of pus. Such an incision can be easily made if done carefully, even by one not particularly expert in manipulating aural instruments. Such an incision should be free, should lie in the posterior portion of the membrani tympani, and may well be carried for some distance upon the postero-superior wall of the canal. If a delicate and very sharp knife is carried directly through the tumefaction until the point of the knife impinges upon the bony wall and is made to cut its way outward and backward, the rich vascular plexus which lies in this region is opened, and direct depletion is the result. Such an incision seldom fails to stop the inflammatory process, if the measure is instituted before effusion has taken place; while it is a matter of necessity after pus formation, in order to evacuate the secretion and to prevent extension or septic infection. After such an incision has been made the rules previously laid down in regard to frequent irrigation of the canal are to be followed. As regards the frequency with which irrigation is to be repeated, this must depend upon the amount of discharge. This discharge in young children is frequently very profuse, especially after spontaneous perforation, and for the first few days it may be necessary to irrigate the ears as frequently as every two hours during the day time, and once or twice during the night. In syringeing the ears in an infant the auricle should be drawn downward and backward, and the tip of the instrument should be introduced well into the meatus. The instrument most easily manipulated where we have to do with very young children, is the soft rubber ear syringe. In this instrument both the receiver and the delivery tube are of soft rubber, and it is impossible to inflict any injury by introducing it into the meatus. In older children an ordinary piston syringe of hard rubber is preferable, as the bony meatus is already developed. The instrument is best provided with an olive tip to prevent too deep introduction into the meatus. The attendant is instructed simply to introduce the syringe as far as possible into the canal and to inject the fluid with moderate force. In this way no injury can be done, while the perfect cleansing of the canal is insured.

Where early incision has been resorted to, the discharge seldom lasts more than five or six days, and if the case has been one of a circumscribed external otitis the discharge does not last as long as this, the edges of the wound approximating and uniting in a very short time. If there has been an acute otitis involving the lower portion of the cavity alone, or if we have had the more severe form of acute purulent otitis involving the structures within the tympanic vault, the incision through the membrani tympani heals perfectly in a very short time. Herein lies the advantage of surgical interference as compared with spontaneous perforation of the drum membrane. Where this latter occurs it must be the result of a local necrosis and actual tissue destruction, and considerable time is required to repair the parts; it should be remembered that when a wound in the membrani tympani cicatrizes the fibrous layers are not reproduced, and the cicatrized portion possesses less resistance than the normal membrani tympani, and in later life is frequently the cause of a tension anomaly with consequent disturbances of audition. No such cicatricial tissue is formed in the healing of an incised wound, and a few months after the operation it is frequently impossible to recognize the line of incision.

I do not think that we can too strongly urge the advantage, or indeed the necessity, of early and free incision through the inflamed tissue in all cases of acute otitis which do not yield to the abstraction of blood and to the application of dry heat. The disappearance of all symptoms upon incision is usually immediate, although occasionally the temperature remains slightly elevated for twenty-four to forty-eight hours in spite of the fact that drainage is perfectly free. A sudden rise of temperature, either after incision or after spontaneous perforation, is usually an evidence that the irrigation has been imperfectly performed, and the temperature frequently falls immediately after thorough cleansing of the canal. A continuous high temperature after free discharge, either spontaneous or following surgical interference should always lead to a careful examination of the mastoid process. Where early incision is adopted extension in that direction rarely takes place, as when the knife is carried well up into the tympanic vault it passes through the upper and posterior part of the membrani tympani and from thence to the canal wall, the incision serves the same purpose as the Wilde incision behind the auricle; with the exception that it is much more efficient. In the infant the mastoid process is rudimentary, while the tympanic vault is of about the same dimensions as in adult life, and division of the tense fibrous bands lying in the upper portion of the tympanic cavity is therefore more efficacious than an incision through the periosteum covering the external surface of the mastoid.

Hyperexia of Cholera Infantum.—Dr. Pepper calls attention to the fact that in cholera infantum with cold and cyanosed extremities, a condition of hyperpyrexia exists in the trunk, and the rectal temperature will range from 105° F. to 108° F. This is a most dangerous symptom, and is to be combated by hydro-therapy, placing the child in an 85° F. bath and cooling the water gradually. He gives no food till the symptoms abate, as digestion is entirely suspended during an attack.—*Pract. & News.*, *1895*, *237*.

Typhoid Fever and Sewer Gas.—Typhoid fever cannot be transmitted by sewer-gas, is the report of the experts to the London Common Council. It is claimed also that the bacilli find it difficult to live in town sewerage.—*Medical Record.*

Treatment of Seborrhœic Eczema in Children.—**Feulard** (*Journ. des Prat.*) observes that attention must be given, in the first place, to the diet, which should be limited to milk, with the addition, in older children of eggs. In the local treatment the first step is the removal of crusts, which may be effected by using warm coal-tar lotions, preceded, if necessary, by poultices. After the crusts have been removed he uses gauze compresses soaked in a solution of resorcin (6 in 1000). These are kept constantly applied to the scalp by day and are applied frequently to the face. By night an ointment is used, consisting of 1 part of balsam of Peru to 30 parts of vaseline. Later he uses fine starch powder, or a powder consisting of equal parts of starch and carbonate of bismuth. Recovery is rapid if the instructions as to diet are strictly observed and the dressings used with regularity.—*British Medical Journal.*

Clinical Memoranda.

A CASE OF CONGENITAL CRETINISM.*

BY J. P. WEST, M.D.,

Bellaire, Ohio.

MR. PRESIDENT : Three years ago I suppose it would not have been warrantable to take the time of the Society with this case, although it is a rare one. But now since the recent advances made in the use of the animal extracts, it becomes not only an interesting case but a very important one ; important in that it may help some to recognize and begin treatment early in similar cases.

This child is a congenital cretin and it only requires brief observation to confirm this diagnosis. She is now seventeen and a half months old, and was born and has lived about a mile from Bellaire, on a hill four hundred feet above the Ohio River. She is the third of four children ; the other three are boys. The oldest died, when six months old, of cholera infantum. The second child is four years old, and the youngest nine weeks. These are very healthy children. The father, a farmer, is twenty-seven and the mother twenty-two years old, both being healthy, of average intelligence, but below the average height. The paternal grandfather died from the effects of an enlarged prostate ; the maternal grandfather, from disease of the heart. There is no history of any hereditary disease nor of goitre ; nor is there any goitre in the vicinity.

The labor was normal ; the child small, weighing about six pounds. For the first few months nothing appeared wrong with the baby, although the mother saw she was slower about noticing things than her other children had been, and would lie unnaturally quiet for long periods, often paying no attention whatever to her voice or to any noise. As time passed she showed no desire to sit alone and seldom a desire to raise her head. Her mouth was always open, her tongue protruding; she took no notice of her surroundings, and it was with the greatest difficulty that her attention could be attracted. She was now about nine months old, and it was evident to the parents there was something wrong but it was believed she would outgrow it.

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* Presented to the Eastern Ohio Medical Society, July 10, 1894, and January 8, 1895.

She was brought to me two weeks ago, when seventeen months old, and a pitiful looking object she was. She weighed fourteen and one-half pounds and was twenty-three inches in height. If you are not sure that she is mentally dwarfed also, an attempt to attract her attention will convince you. Sometimes this cannot be done at at all; rarely can it be done in less than a minute and often it takes two or three minutes, although the mother tells me, there has been some improvement in this respect. She can be made to laugh but it requires one's undivided attention to accomplish it. You see that her skin is thick, harsh, dry and yellowish. Over her shoulders and arms there is some roughness and peeling of the skin ; this often occurs on the feet also. A patch of eczema appeared back of her right ear about a month ago but is now nearly well. The head is flat with a low forehead and prominent parietal eminences. The anterior fontanel is widely open ; at times flat, at others full. Her hair is coarse, rough, and scanty. The eyes are dull, the lids red and puffy and cover the lower half of the cornea. The nose is broad and flat. The mouth is always open, the lips very thick, and the tongue large and always protruding. There are no teeth. The neck is short and thick. No thyroid gland can be felt. Pads of fat are found in the axilla and below the outer third of the clavicles. The chest is rather narrow. A small swelling can be felt where each rib joins its cartilage. The abdomen is full, prominent, and hard ; the umbilicus protruding ; the abdominal organs normal. The hands are short and stubby. The legs are short, thick, and bowed, and the joints of the extremities somewhat enlarged. There is some lordosis. Her temperature has been taken several times and varies from $97^{3}/_{5}{}^{\circ}$ to 99° F. in the rectum. Her breathing is almost always noisy as if there were naso-pharyngeal obstruction ; respiration 24 ; pulse 96. I have never heard her cry but once, when it was most peculiar and distressing. When crying, she first becomes very restless, then opens her mouth wide, shuts her eyes tight, gets very red in the face, and emits a sound resembling a grunting cough. This sound is repeated again and again from twenty to forty seconds apart, the face in the interval is held firmly in the position just described. Her laugh, which I have never heard, is said to be as peculiar as her cry.

The mother says the child is good natured, recognizes her and the grandmother, can be made to laugh and seldom cries. She often lies perfectly still, breathes slowly and quietly, and cannot be aroused. Occasionally, when laughing or crying or even when still, she almost strangles, becomes blue in the face, and it is only with difficulty she can be brought to her normal condition. This occurs without recognizable cause, may be repeated two or three times in a day, or may not occur for a week at a time. She seldom sweats and never freely. She takes but little food, and that milk, and is very costive.

She began taking the dessicated thyroid gland of the sheep five days ago and I hope she will be benefitted by it. I shall report results and show her to you again.

January 8, 1895. This is the case of congenital myxœdema I showed you some time ago. She has now been under treatment six months. It will be hard for those of you who see her now for the second time, to believe it is the same child. The change in her condition is certainly extraordinary and most gratifying. During this time she has taken about three hundred doses of dessicated thyroid extract and two drams of glycerine extract of the sheep's thyroid. Beginning on July 6th. she took one-half grain twice daily of the powder. On the 12th, one grain twice daily. She took this latter amount for five days and on the third day began to be very cross and fretful, cried and was restless, slept poorly and wanted to be carried most of the time, instead of lying quietly wherever she was put as she did formerly. She sweat freely, vomited several times, and her bowels were loose. I saw her on the third day of this disturbance and stopped the medicine. Her temperature was 101½° F. in the rectum. She was continually squirming and fretting and was sweating. Over the forehead and cheeks there were eighteen or twenty very hard papules about the size of a pinhead. After four days these symptoms passed off and she had lost one and one-fourth pounds in weight. Three times afterward this same disturbance occurred, and each time the amount of the medicine had been increased too rapidly. The extract was always stopped promptly on the appearance of these symptoms and they never were so severe again.

On July 20th, she was put on Crary's glycerine extract, one and one-half drops three times a day. After taking this two weeks she became feverish and fretful, and the dose was diminished, and stopped entirely from August 4th to 7th, then was begun again and kept up until August 23d. From this time until the present she has taken almost uninterruptedly one grain of the powdered thyroid twice a day. In the latter part of August she was sweating so profusely about the head, particularly when asleep, that only one grain daily was given during the first ten days of September, but as this had no effect on the sweating she was put back on the two grains. On October 15th and again on December 10th three one-grain doses were tried, but she could not tolerate this amount and we continued with the two grains. For three weeks in July she took fluid extract of cascara sagrada for the constipation, after which she had no trouble with her bowels. On September 20th she was ordered five to ten-drop doses of cod liver oil and a small teaspoonful of cream three times a day. This treatment was continued until the latter part of November when it was thought best to discontinue it, as the sweating had ceased and she was becoming quite fat.

The child had not been under treatment quite four weeks before some improvement could be noticed. Her skin was not quite so thick and yellowish, her lips and tongue not so large, and her attention more easily attracted. During August there was a gradual and very perceptible change, and a new growth of hair appeared. On September 20th I have noted that there has been a considerable growth of new hair which covers most of the scalp, is finer, and not harsh and wiry like the old, and on the sides of the head is a dark brown, much darker than on the other parts of the head. She plays most of the time and notices everything said to her and given her. She will lie on the floor for an hour playing with her feet and trying to put them in her mouth. She turns her head quickly when spoken to, and looks at one intelligently.

October 1st. Is twenty-five inches in height. Weighs sixteen and a half pounds. Her abdomen has lost two and a half inches and her chest gained one and a half. The anterior fontanel is one-third smaller; skin not so yellowish nor so thick. There is a little peeling over the knees and front of legs. She holds the head up with but little effort, has a pleasant expression, smiles and is easily made to laugh. The cry and laugh have lost their former peculiarities and are now perfectly natural. The eyelids are swollen but little, her lips are not so large, and the tongue is very seldom out of the mouth. A few hard papules are scattered over her face. Her hands are not quite so "spade-like," but she retains her stumpy look.

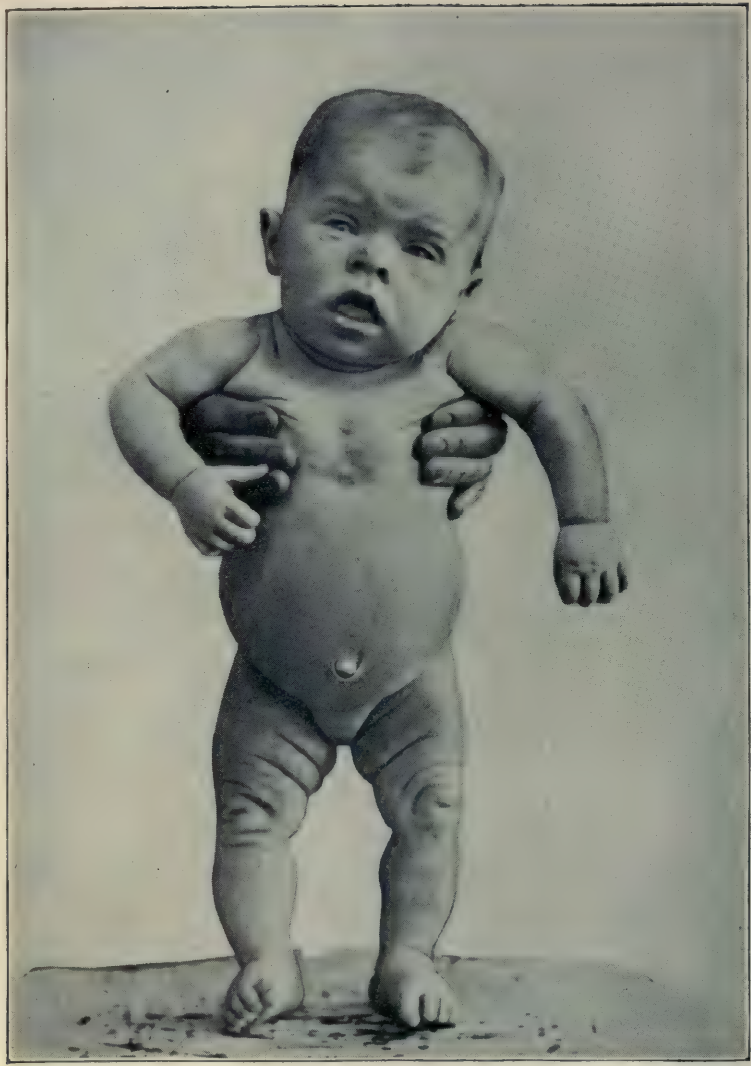
November 1st. The improvement noted above has continued and she has gained in every way. All the old hair is gone. The head is not so flat nor square, the fontanel only one-third its former size. The tongue no longer protrudes and the mouth is assuming a much better shape. The skin is smooth, soft and clear. She eats and sleeps well, and plays most of the time, knows all the family and exhibits considerable jealousy toward her younger brother.

January 8, 1895. Her improvement has been steady and rapid. There is no evidence now that would indicate that this child was a cretin, except her height. She is several inches shorter than she should be and still looks somewhat stumpy. Notice that her skin is as soft and clear as any childs. Her hair is plentiful, soft and silky, while before it was scanty and wiry. The expression of her face is bright and she knows all that goes on about her. She will try to cough and sneeze, and do many other things when told. Her eyelids are no longer swollen and baggy. Her tongue is perfectly normal, and her mouth anything but repulsive. During her waking hours she is continually on the move. I call your attention, particularly, to her abdomen and umbilicus and the changes that have taken place here. The abdomen is not larger than it should be and the umbilical hernia, present at first, is gone. On October 1st she cut her two lower incisor teeth, the first upper incisor on November 27th and the second December 7th, the two upper lateral incisors in the middle of December, and the two lower the latter part of the month. She began sitting alone the middle of November and now can stand by holding to a chair. She cannot crawl but you would be surprised to see how fast she can go across a room by rolling over and over.

This table will afford an idea of her improvement.

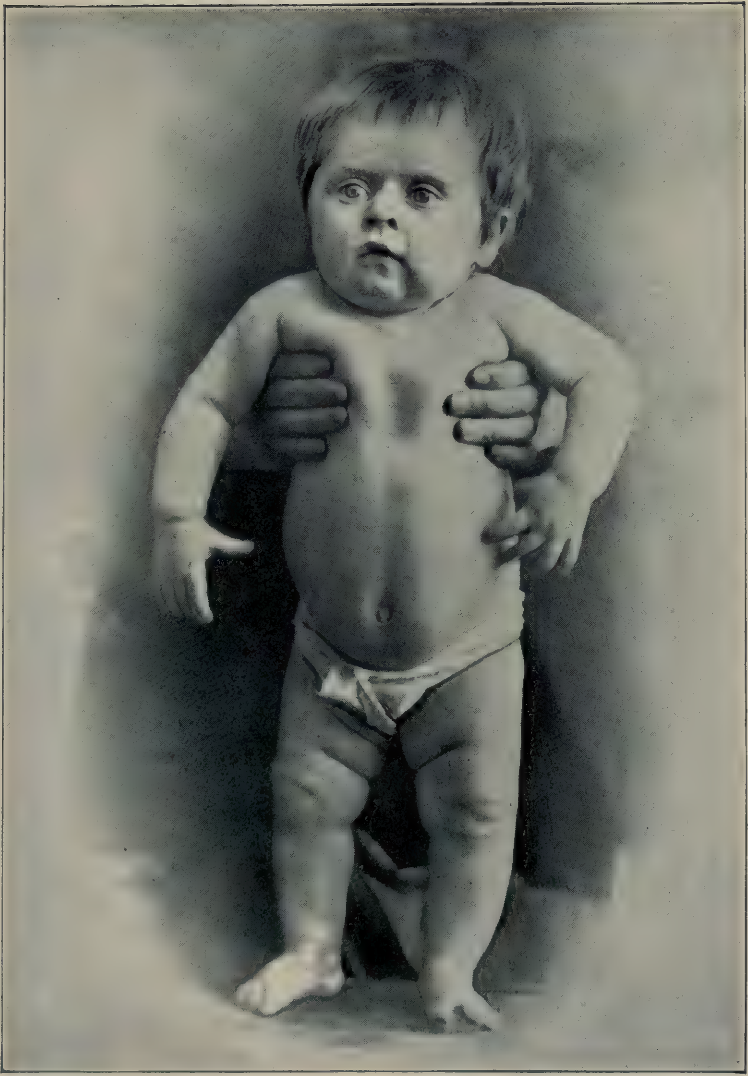
	JUNE 23, 1894.	JANUARY 8, 1895.
Weight	14½ lbs.	22½ lbs.
Height	23½ in.	27½ in.
Neck	10 "	
Chest	15 "	19 "
Abdomen	20 "	21½ "
Circumference of head	16¾ "	19 "
Ear to ear	10 "	11 "
Nose to occipit	11½ "	12¼ "

I desire to acknowledge my indebtedness to Dr. Geo. W. Crary, of New York City, for the interest he has taken and suggestions made in the treatment of this case.



CRETIN, SEVENTEEN MONTHS OLD.

DR. J. P. WEST.



CRETIN, AFTER SIX MONTHS TREATMENT.

DR. J. P. WEST.

TWO CASES OF CONGENITAL CYANOSIS DUE TO STENOSIS OF THE PULMONARY ORIFICE WITH AN INTERVENTRICULAR FORAMEN.

BY DAVID BOVAIRD, M.D.

House Physician of the New York Foundling Asylum.

In the ARCHIVES OF PEDIATRICS, September, 1894, Dr. Wm. P. Northrup reported a case of congenital cyanosis due to stenosis of the pulmonary orifice with incompleteness of the interventricular septum. When the "Hearty" therein described died, he left behind him in the Foundling Asylum his double, a little girl who still bears his name, "Hearty," and reproduces very closely the characters of her former companion. There is the same stubby form, the short neck, the puffy face, the clubbed fingers, the prominent abdomen, the blueness of face, lips and extremities.

The examination of the heart gives corresponding points: Apex beat in fifth intercostal space one-half inch outside nipple line. Area of dullness increased considerably, but limited on right by mid-sternal line. Thrill perceptible with systole in second intercostal space just to left of sternum. Loud blowing systolic murmur to be heard all over front of chest, but loudest point where thrill is felt. The close correspondence in the physical signs warrants the belief that the malformation as that found in the other case. Moreover this little one is now completing her fifth year, a fact which in itself points to a pulmonary affection. Medical cases often seem to substantiate the old adage concerning birds of similar plumage. A year ago, while an interne of the Presbyterian Hospital, it had been my privilege to see and study these two cases in the Foundling Asylum. Soon afterward I was one morning walking in Central Park, when I saw approaching me a young man whose appearance at once attracted my attention. His face was so blue as to suggest imminent asphyxia, but he was walking along quite easily and unconcerned and in evidence of comfort was quietly smoking a cigar. As he passed me, I saw that hands as well as face were blue and that the fingers presented the "clubbed ends" familiar to students of heart lesions. Day after day I met this blue man some-where in my course until I came to look forward to the meeting for further opportunity to observe his strangely contradictory blueness and comfort. At last medical interest overcame all other considerations and one morning I stopped him and entered into conversation. To be brief, I soon learned that he had always worn his cerulean complexion, that he had never been sick, that he thought himself well and was regularly employed as a clerk, that no physician had ever examined him or suggested that he was an interesting case. Finally I gave him the hospital address and asked him to call and let me examine him. One week after leaving the Presbyterian Hospital, returning on a visit, I was walking through one of the men's wards. Seeing a patient evidently comatose, I stopped a moment at his bedside. Something in his face struck me as familiar. Automatically dropping my hand on the chest, a strong thrill greeted the touch and putting my ear down I at once heard an astonishingly loud blowing murmur. In an instant the chain of association was completed and I realized that my "blue man" had at last come for examination. His admission card showed that he had entered the hospital the very day after I left it.

More careful examination of the heart gave the following results: Apex beat in fifth intercostal space just outside nipple line. Cardiac dullness increased but limited on right by mid-sternal line. A systolic impulse in second space just to left of sternum. A marked thrill all over pricardium. A blowing systolic murmur heard all over the anterior chest, but loudest over the pulmonary valves. As he lay in bed, the cyanosis previously so marked had almost entirely disappeared.

The known history of the case with these physical signs led to the diagnosis of congenital pulmonary stenosis with some compensatory malformation, such as a potent foramen ovale or an interventricular foramen. The following day the case came to autopsy. The relevant points of the report, for which I am indebted to the kindness of Dr. Thacher, of the pathological department, are these: Heart much enlarged, weight sixteen ounces. Pulmonary orifice so narrowed as to admit only the tip of the little finger. Two cusps of the pulmonary valve adherent, fusing into one, and at the point of union a hard nodule; no other changes in valve. The right ventricular wall so hypertrophied as to be thicker than the left which was normal. In the interventricular septum just below the aortic valves a foramen readily admitting the index finger. The other valves and chambers normal.

The cause of death was found in an abscess of the brain with secondary meningitis. The correspondence in physical signs with those found in the children—the classical pathological picture, the apparent comfort of the patient during life, and the fact that he had reached the age of twenty-two years, make the case worthy of record. Furthermore this case corroborates certain points made in the report of Dr. Northrup, namely, that cases of congenital cyanosis living more than two years are most probably cases of pulmonary stenosis, with some secondary compensatory defect to allow the right ventricle to dispose of the blood dammed back upon it; secondly, that hypertrophy of the right ventricle does not give dullness to the right of the sternum even when present in marked degree. The direction of the axis of the heart, and the evident fact that the ventricular hypertrophy will increase the cross section of the heart rather than its length, give satisfactory explanation of the proposition. The cause of death seems worthy of some remark. Two of these three cases which have come to autopsy have had abscess of the brain. J. Lewis Smith notes the frequency of cerebral lesions in cases of congenital cyanosis. Eustace Smith found cerebritis and cerebral abscess in two of his cases, and speaks of a third with symptoms of a similar affection. Considering the comparative rarity of cerebral abscess, the association in these cases with congenital heart lesion is striking. The case which I report from the Presbyterian Hospital belonged to the service of Dr. Wm. H. Flint, to whose courtesy I am indebted for the privilege of using the records relating to it.

Treatment of Pulmonary Tuberculosis With the Blood Serum of the Horse.—Dr. Poue Paquin, for many years professor of bacteriology in the State University at Columbia, Mo., has been experimenting for some time upon the blood serum of the horse as a remedy for tuberculosis. Demonstrations satisfactory to himself have justified the faith that the horse is naturally immune against tuberculosis. He has therefore been using for some months the blood serum of selected horses, carefully injecting it underneath the skin of the victim of tuberculosis. He claims that the horse being naturally immune, the blood does not require artificial immunization, but can be used directly. About fifty cases have been experimented upon with almost universaly good results.—*Medical Record.*

Editorial.

PROGRESS OF THE INFECTIOUS DISEASES.

MORTALITY records for 1894 have almost uniformly presented a gloomy picture as regards diphtheria. In the large centres of population of this country and Europe, the death rate of this disease has with very few exceptions, steadily increased for several years. The mortality for the last year was especially large. In New York City and Brooklyn it was seventy-one in each one thousand deaths, having risen from forty-six in 1891. In rural regions as a rule the mortality from diphtheria has not materially changed for several years. In the State of New York it ranges outside of the cities and large towns from thirty to forty per one thousand deaths, and in some localities is as low as seventeen.

A very cursory review of recent reports is sufficient to show that diphtheria is one of the most formidable diseases of the present age. Although modern sanitary science has done much to hold it in check, it has been unable to wholly stay its progress. Despite every effort, it has up to the present year steadily increased and has gained a firm foothold in almost every locality in which it has been introduced. In no city or large town has it been eradicated after it has been well planted. In view of these facts and from the conditions as they now exist, any system of treatment which is followed by a permanent and decided reduction of the death-rate of diphtheria must be regarded as a triumph of medical science. The more decided the reduction, the more brilliant will the triumph be.

Many interesting facts regarding the progress of diphtheria and other infectious diseases are contained in the recent report of the State Board of Health of New York. This report is of more than usual value as it covers a very wide area including extensive rural and mountainous regions, numerous villages and small towns, and the metropolitan district of New York and Brooklyn. It may be considered as fairly representative of the Northern portion of the United States. In a total of 118,195 deaths, 18.6 per cent. were due to the zymotic disease. The mortality under five years was over 35 per cent. a higher rate than has been reached before for several years. The deaths from diphtheria and croup were 6,592 or ninty-six per hundred thousand of the population. There were 1,227 deaths from scarlet fever, 900 from measles, 1,640 from typhoid fever, 308 from smallpox, 8,956 from the diarrhœal diseases.

Tuberculosis as usual caused a large proportion of the total number of deaths, nearly one death in nine being due to phthisis. Except in the semi-mountainous regions of the Southwestern counties where the rate was very low, there was little difference in the mortality from this disease in city and country. The records for tuberculosis are extremely encouraging as they show a steady decrease in the death rate during the past four years, having fallen from 123 in 1891, to 110. This is attributed to increased knowledge regarding the disease and its methods of prevention. Typhoid fever also presents a most encouraging record in the large cities, where it has steadily and decidedly decreased for several years. The highest death rates were in the rural districts, being in some instances three times as great as in New York City. This is explained by the greater purity of the water supply of cities, every step taken to improve the water supply having been followed by a marked diminution in the occurrence of typhoid fever.

THE increasing tendency to nervous disease observed in recent years is becoming a subject of interest to workers in every department of medicine. This is especially true in pediatrics. The high tension of modern life is not felt by adults alone. Children and even infants are effected directly and indirectly by the same influences which generate nervous disorders in their elders. In addition to the necessary mental and nervous burdens which children must share in common with all members of modern society, numerous unnecessary burdens are thrust upon them. Never before has so much attention been devoted to childhood. Thousands of people are devoting their lives to the task of devising for children new amusements and recreations. Books and magazines almost without number are printed for their exclvsive use. Thirty years ago wealth could not buy what the children of the most ordinary households now commonly enjoy. Never before have children occupied so important a place in the household. The tendency to exhalt childhood and womanhood is one of the most commendable in modern civilization. It is being carried in some directions, however, to a harmful extreme. This seems to be especially true in the larger towns and cities, and the family physician and pediatric worker have many opportunities for doing missionary work in this direction. Many of these opportunities are admirably described by Dr. Bridge in a recent number of the Journal of the American Medical Association, an abstract of which appears in the present issue of the ARCHIVES. Many of the errors of parents, as the author intimates, are due to the greater comradry with their children and the growing tendency to remove the barriers between childhood and age. This naturally results in the feeling that children should enjoy the same pleasures and indulge in the same pastimes as their elders. Such recreation is frequently of a character far too stimulating for the sensitive nervous organism of the child. The prevailing tendency of the times is to over stimulation of children, This tendency pervades our whole educational system. It permeates juvenile literature, it is clearly manifest in childish recreations, and has invaded the home, Such over-straining and stimulation of the mental and nervous organism cannot fail to cause harmful effects during childhood, and frequently produce a neuristhenic and nervous temperament in later life.

ANOTHER grave error in the management of children pointed out by the writer, is the tendency to grant every wish of a child which may not seem immediately harmful without regard to its future results. Certain temperaments Faust-like, are ever ready to mortgage the future for momentary pleasure. They lack utterly the power to deny themselves any attainable wish. When such people become parents they adopt the same principles in the management of their children. Either from inability to deny a request, or from sheer indolence and disinclination to cross the child and provoke a fit of temper, they weakly yield to every demand. Such continued indulgence necessarily results in deterioration. The mortgage placed by the parent upon the future of the child is very certain to be foreclosed—it may be at a time which will prove most disasterous to its career. Many of these errors are due to inability to appreciate the future results ; others are due to ignorance, and in such cases the medical man by judicious counsel to the parent may prove a friend of inestimable value to his little patient.

THE meeting of the American Pediatric Society which is to be held at the Hot Springs of Virginia on May 27, 28, and 29 promises to be a most successful one. No other American society has done more good work in pediatrics during the past six years. The papers read at its meetings have been almost without exception the result of original observation and research, it being one of the chief aims of the society to encourage original work. At the coming meeting the antitoxin treatment of diphtheria will be especially discussed. The characteristic features of grippe in children, and the different forms of eruption which simulate scarlet fever will, also, be special topics for discussion. The council desires that, as far as possible, the above subjects be kept in mind in preparing papers, but communications on other subjects will be gladly received.

THE first annual meeting of the Ohio State Pediatric Society will be held in Columbus on May 15th. Addresses will be delivered by Dr. A. Jacobi, of New York ; Dr. J. L. McCurdy, of Dennison; and Dr. George M. Clouse, of Columbus. The following are the officers : Dr. S. L. McCurdy, President ; Dr. J. Park West, Vice-President ; Dr. George M. Clouse, Secretary and Treasurer. The society gives promise of vigorous growth and a useful career.

Bibliography.

On Chorea and Choreiform Affections. By William Osler, M.D., *Professor of Medicine, Johns Hopkins University; Physician in Chief, Johns Hopkins Hospital, Baltimore.* Philadelphia: P. Blakiston, Son & Co., 1894. Pp. x–125. Price $2.00.

This book written in the usual clear, concise style of the author; opens with a historical sketch in which the early description of chorea-minor by Sydenham is quoted: "St. Vitus' dance is a sort of convulsion which attacks children from the tenth year until they are done growing. At first it shows itself by a halting, or rather an unsteady movement in one of the legs, which the patient drags. Then it is seen in the hand on the same side. Do what he may with it, it will be jerked elsewhere convulsively. If any vessel be filled with drink, and put into his hand, before it reaches his mouth, he will exhibit a thousand gesticulations like a mountebank. Then perhaps he contrives to bring it to his mouth, if so he will drink the liquid off at a gulp. Now this affection arises from some humor falling on the nerves, and such irritation causes spasm."

The general etiology follows. The relations of chorea-minor, as regards sex, age, station in life, race, heriditary tendencies, infectious diseases, and rheumatism, are briefly considered. At the Philadelphia Infirmary for nervous diseases the author had the opportunity of observing five hundred and fifty-four cases of which seventy per cent were females.

The disease was found most frequently among those in the lower walks of life, and almost exclusively in the white race.

In eighty per cent. there was a history of chorea in other members of the family. Overwork at school is looked upon as a predisposing cause. With reference to the association of chorea and rheumatism, the author is evidently of the opinion that they do not co-exist so frequently as some authorities believe. The cases were all carefully examined with reference to this point, and in less than twenty-one per cent., was there a rheumatic history.

The most instructive chapters in the book for the general practitioner are those relating to symptomatology. The symptoms in the young, in the pregnant, in the adult, and in the aged, are treated of separately, and in a most thorough manner.

Another important chapter is that relating to the cardiac affections met with in this disease. The study embraces: First, the condition of the heart during the attack. Second, its condition in fatal cases. Third, the subsequent heart history of those who have recovered from the disease. Fourth, the state of the pericardium.

Of the cases seen at the infirmary for nervous diseases, thirty and seven-tenths per cent. presented heart murmurs. Of the one hundred and forty-one seen at the outdoor department of Johns Hopkins Hospital, forty-two had cardiac murmurs. In order to learn the condition of the heart, subsequent to chorea, one hundred and forty patients were examined from two to sixteen years after the attack. The results are surprising, in that they show an unexpectedly high percentage ($51\frac{3}{7}$) who had a permanently damaged heart. In fifty-one, the heart was normal; in seventeen there was a disturbance that was considered functional; in seventy-two there were signs of organic heart lesions. Of the fifty-one cases in which the heart was found normal, there was a history of rheumatism in nine. In seven of these the disease was of the articular type.

Another surprising fact brought out by the study, was that sixty-six per cent. of the patients who showed no evidence of rheumatism and in whom there was no history of that disease, had pronounced cardiac lesions. The author believes endocarditis to be a very frequent complication of chorea-minor, and that in a considerable portion of cases, much larger than has hitherto been supposed, the complicating endocarditis lays the foundation for organic heart disease.

The chapters on morbid anatomy, pathology, and bacteriology do not help to any extent to clear up these unsettled points. The author believes "that very probably chorea-minor, will be found due to a poison allied to, but not the same as that of rheumatism."

Under treatment, excellent advice is given regarding management and medication but nothing new is suggested. Rest, seclusion, tonics, and arsenic are advocated.

A chapter is devoted to choreiform affections, which are divided as follows: First, simple tic or habit spasm or generalized tic. Second, tic with imperative ideas.

Third, complex, coördinate forms of tic. Fourth, cases of noisy spasm of the respiratory muscles.

The work closes with an appendix which gives an analysis of seventy-three fatal cases of chorea-minor. The various subjects are treated in a thoroughly scientific manner, and the book as a whole, cannot help but instruct any earnest student of medicine.

Clinical Lectures and Essays on Rickets, Tuberculosis, Abdominal Tumors, and Other Subjects. By Sir William Jenner, Bart., G.C.B ,M. D., London and F.R.C.P., D. C. L. Oxon., LL.D. Cantab and Edin., *President of the Royal College of Physicians and Surgeons from 1881 to 1888.* (New York: Macmillan & Co., 1895, pp. XII.—329. Price, $4.00.)

This is in many respects a remarkable book. It consists of about twenty lectures, many of which were delivered thirty-five years ago, exactly as they were originally given without attempting to embody the results of more recent investigations. The first three lectures are upon Rickets and were delivered in 1859. They form to-day most interesting and instructive reading, and are almost as truly "up to date" as when they were delivered. We have learned something regarding the etiology and pathology of rickets during the past thirty years. It was, however, the same disease in 1859 that it is in 1895. It undoubtedly presented the same clinical aspects and Sir William Jenner's marvelous powers of observation enabled him to see practically all the symptoms and phases of this protean disease. If writing to-day, he would, undoubtedly, modify certain statements regarding histology and etiology. The clinical picture he would undoubtedly redraw with very few modifications.

Two lectures on the Evidences of the Formation of Tubercule in the Child, also show surprising insight and power of observation. Although recent histological researches have shown the identity of the ultimate pathological products of tubercule and scrofula, the author in the preface still holds that the constitutional states which precede the local manifestations, are of a different type in the two disorders. He, therefore, still believes that they deserve separate consideration, and still adheres to the propositions set forth in these lectures in 1861.

Several lectures are devoted to diseases of the adult. A series of five, delivered in 1868 on the Diagnosis of Extrapelvic Tumors of the Abdomen, are worthy of special mention. Lectures on Deformities of the Chest and on the Determining Causes of Vesicular Emphysema, the latter delivered in 1857, also show the same acute power of observation which is evinced in the lectures on rickets and tuberculosis.

The work is a most excellent one for the younger generation of medical men to read. They will learn that the generation which has preceded them was in possession of much valuable clinical knowledge, that the science of medicine has not entirely developed since the germ theory was advanced, and that many things were settled long ago, and will not be disturbed by any amount of scientific research.

A most important lesson to be derived from the work is that accurate and conscientious clinical observations are always valuable, and will stand the test of time. Pathology, theories of etiology, and methods of treatment will change. Disease continues practically the same from decade to decade, and accurate clinical records are modified but little by scientific research. It is the most permanent work that the medical man can do. To do it well, however, requires training and painstaking effort. It requires not only the ability to observe and record, but the far higher ability to draw correct conclusions from the acquired data. The judicial temperament is necessary for the highest success in this work. As these qualities are possessed by comparatively few, comparatively little of the vast mass of clinical material constantly being published will survive. Few men have that insight, that power of observation, that ability to formulate true conclusions from their observations which will make their clinical lectures worthy of publication thirty years hence.

The Contagion of Mumps, according to the *Courrier Medicale*, is from eight to thirty days. In most cases the duration is from eighteen to twenty days. It is contagious during the greater portion of this time, and for a certain length of time after the swelling of the glands has disappeared. A micro-organism has been found in the parotid gland, which is believed to be the cause of the disease, but this is not yet proved. Soreness of the throat and swelling of the parotid are occasionally the first symptoms. When orchitis occurs by metastasis, the epididymis is sometimes first involved.—*Gaillard Med. Jour.*

Society Proceedings.

NEW YORK ACADEMY OF MEDICINE.

General Meeting, April 4, 1895,

JOSEPH D. BRYANT, M.D., PRESIDENT.

"Experiences in the Production and Use of Diphtheria Antitoxin."

Dr. Herman M. Biggs opened the discussion by a paper with this title. He said that during his sojourn in Berlin, last summer, he had had an opportunity to come in contact with many of the prominent scientists who were engaged in investigating the properties of diphtheria antitoxin; and they had even at that time, one and all, expressed entire confidence in it, as a therapeutic agent of remarkable potency in diphtheria. The New York Board of Health had not been able to experiment with serum manufactured under its direction, until about the first of the present year. For statistical purposes, the cases treated with the antitoxin could be conveniently arranged in two series, viz.: (1) those treated in the Willard Parker Hospital; and (2) those treated by physicians connected with the Health Department, but occurring in the tenements. He would consider the latter first. Of these, numbering 255, forty had died, giving a mortality of 15.69 per cent. Of the total number of cases. fifty were noted as mild, seventy-six as moderately severe, and the remainder as severe. From the notes of 252 of the cases, it appears that the disease was confined to the larynx in twenty-one; in forty-one to the larynx and pharynx; in seventeen to the larynx, pharynx and nares; in fifty-seven to the pharynx and nares; and in 116 to the pharynx and tonsils. Fifteen out of the forty deaths, occurred within twelve hours after giving the injection of antitoxin. Excluding these cases, which were really moribund at the time of beginning the treatment, the mortality is reduced to 10.4 per cent. Among the thirty cases treated on the first day, there were two deaths. One of these was a child with severe laryngeal stenosis. The effect of the treatment was simply to delay the fatal termination, the child dying on the twelfth day from broncho-pneumonia. The other fatal case was also one of severe laryngeal diphtheria, and occurred in a child of thirteen months. The child was intubated, but ultimately died of a suddenly recurring stenosis, three days after the removal of the tube. Out of the seventy-seven cases treated on the second day, there were seven deaths. Three of these were moribund at the time of commencing the treatment. Sixty-seven cases were subjected to the antitoxin treatment on the third day of the disease, and of this number eleven died. With one exception, all of the fatal cases had laryngeal diphtheria, and four of them were moribund at the time the injection was given. Among the thirty-one cases first treated on the fourth day, seven died, three of these being moribund at the time of the injection. The statistics made it evident that but little benefit could be expected, unless the treatment were instituted before the fifth day of the disease. Out of 197 cases in which the treatment was begun before this period, the mortality was 7.79 per cent.

The other series did not give such good results, probably because of the more severe character of the cases coming to the hospital, and because they were ordinarily not seen at such an early stage of the disease. Of the 129 hospital cases, eighty-three were nasal, pharyngeal, or both, and forty-six were laryngeal. There were thirty-one deaths in this series, or a little over 24 per cent. The records for the preceding year at the same season, showed in a series of 146 hospital cases, a mortality of 32 per cent. In 1894, also, there had been a series of sixteen cases of intubation, with thirteen deaths; or a mortality of 81 per cent., whereas, out of nineteen cases of intubation treated with the antitoxin, (excluding five cases treated on the fifth day of the disease) there were nine deaths; or a mortality of 47 per cent. Out of the twenty cases of laryngeal diphtheria, not requiring intubation, but receiving the antitoxin treatment, there were six deaths, or a mortality of 38 per cent.

The speaker said that in his experience, the antitoxin had exerted a uniform and marked effect on the pseudomembrane. In the series of 129 hospital cases, various eruptions, chiefly urticarial or scarlatiniform, had been observed in twenty cases. In twenty-one cases in this series, albuminuria had been noted. One patient, after a very troublesome urticaria, had suffered from painful swelling of the principal joints, profuse epistaxis, and later, by paralysis of the muscles of the limbs. There had also been a trace of albumen in the urine during the development of these complications. No other complications had been observed, and in the fatal cases, there had been no new anatomical lesions.

In conclusion, Dr. Biggs said, that it should be remembered that diphtheria antitoxin did not restore heart fibres or renal cells that had already undergone degeneration, and that it did not relieve laryngeal stenosis, or in fact do anything, but combat the diphtheritic toxæmia. At times, the effects of the new treatment had seemed to him almost miraculous, and its value was sufficiently attested, by recalling the fact that the mortality from diphtheria throughout New York city had been between 25 and 35 per cent., at the same time that the cases treated with the antitoxin had only yielded a mortality of 8 or 10 per cent.

"The Technique of the production of Diphtheria Antitoxin."

Dr. W. H. Park, in a paper with the above title, then described the methods used by the Board of Health in procuring, in the first place, the virulent bacilli necessary for the production of the diphtheria toxin, and then the manner in which the blood was taken from the horses, after they had been treated with the toxins of diphtheria sufficiently long to cause the formation in their blood of the desired diphtheria antitoxin. Different horses show very wide variations in the degree of reaction produced in them by the injections of the toxins, and in the quantities of antitoxin which they can produce. In general, it may be said that the greater the reaction to the injections, the greater will be the quantity of antitoxin produced by a given animal. Behring's method of testing the strength of the antitoxin, has been found the most reliable in practice. A strong argument in favor of the property of the serum to confer at least temporary immunity on human beings, was to be found in the fact that the horses so treated regain their susceptibility to the injections after the lapse of several months.

"Experience in the use of Diphtheria Antitoxin for Immunization."

Dr. C. H. Peck read a paper on this subject, detailing observations made in the New York Infant Asylum. After various ineffectual attempts to stay the progress of an epidemic of diphtheria in that institution, by isolating the children, forty-two children, varying in age from one-and-a-half to five years, were separated from the others; and half of them given an injection of diphtheria antitoxin. No case of diphtheria broke out among these children for one month. On January 16 and 17, 224 children were inoculated with Behring's antitoxin, No. 2, in doses of 100 to 200 units, according to age. The first case of diphtheria among these children developed on February 3d. On February 27 and 28, 245 children were inoculated, using the Board of Health serum, and 175 to 225 units, according to the age of the children. This inoculation resulted in complete immunity from diphtheria for four and a half weeks.

"The Results of Autopsies on Persons Dying after Treatment with Diphtheria Antitoxin."

Dr. George P. Biggs said that as a result of observations that he had made at eighteen autopsies on persons who had received the antitoxin treatment; he had come to the conclusion that the antitoxin had a decided influence in loosening diphtheritic membrane; that it had comparatively little influence on cases coming under treatment late in the disease, and complicated with extensive broncho-pneumonia; and that it exerted a marked controlling action on the parenchymatous degenerations of the internal organs.

"The Anatomical Lesions Found in Animals which have died during the Process of Immunization."

Dr. Ira Van Gieson, taking as a type the results of a most exhaustive post mortem study of the tissues and organs of one of the horses that had died during the process of immunization, said that unlike rabies and tetanus, the toxin of diphtheria did not seem to select the nervous system—indeed, he had found the central nervous system, after a most rigorous examination, perfectly normal. The muscle of the heart showed marked fatty degeneration. The spleen had been nearly converted into a mass of blood cells and pigment; the liver appeared as if it had been in a state of unusual activity; the kidneys showed acute degeneration; and the lymph nodes were enormously increased in size. He thought from these studies that the antitoxin was probably largely manufactured in the liver cells.

DISCUSSION.

Dr. Joseph E. Winters, said that after three months of very careful daily clinical observation, of cases treated with the diphtheria antitoxin at the Willard Parker Hospital, he had not only been sadly disappointed with it, but he had seen enough of its action, to make him feel that he was justified in coming to the meeting and vigorously opposing it. In the statistical paper already presented, reference had been made to the marked influence of the antitoxin on the diphtheritic membrane. His own observations at the hospital, certainly had not justified any such conclusion. For instance, a case that had been extremely septic at the time of its admission, had been immediately put on the antitoxin, and this had been vigorously pushed, yet during the three days that the child had lived there had not been the slightest evidence that the membrane had been favorably influenced. In not a single instance, had a septic case shown improvement under the treatment. It had been stated that the best results at the hospital had been obtained in the laryngeal cases, but he could not see any reason for using the antitoxin at all in this class of cases; for when the disease was limited to the laryngeal membrane, there was no possibility of toxæmia. The new treatment, so far as he has seen it used in this hospital, certainly had not relieved the laryngeal stenosis.

Again, in estimating the value of this method of treatment, cognizance should be taken of the severity of the disease at the time of making the observations. At the present time in New York City none of the contagious diseases were severe in character. Statistics had been given already this evening of the results of the antitoxin treatment on intubation cases at the hospital, but the author had neglected to mention the interesting fact that last December, without the antitoxin treatment, there had been eight consecutive intubations and recoveries. The speaker said that he wished to lay special emphasis on the fact, that in many of the cases on which the statistics of the antitoxin treatment had been based, there had been only a bacteriological diagnosis of diphtheria made. There were more than a score of such cases which had not presented the least *clinical* evidence of diphtheria. For this reason, he could not but feel that the statistics that had just been presented were misleading.

In speaking of the complications observed under the antitoxin treatment, mention had only been made of certain unimportant eruptions; but he had seen other and much more serious effects of the treatment. Certain patients after being subjected to the treatment, had exhibited a peculiar range of temperature, associated with severe pains in the joints, and often profound anæmia. It had been claimed that these patients had died of diphtheria, or of a complicating pneumonia, but the temperature charts were those of septicæmia, and the pneumonias were apparently of septic origin. The anæmia he would explain by the disintegrating action of horse serum on human blood corpuscles.

After citing in detail several cases illustrative of what he considered to be the dangerous, and in some instances lethal action of diphtheria antitoxin, Dr. Winters said that he thought these untoward effects could be explained by individual susceptibility. In his opinion, this was also the explanation of the sudden death recently reported in the papers of the young lady in Brooklyn to whom diphtheria antitoxin had been administered.

In conclusion, the speaker denounced the tendency to rely on a bacteriological diagnosis of diphtheria, irrespective of the clinical evidences. He opposed the antitoxin treatment, because he had not seen it relieve a single symptom in the cases at the Willard Parker Hospital; because it was dangerous in its immediate effect on the kidneys and nerve centres, and because it was dangerous in its remote effect on the blood.

Dr. George L. Peabody said, that the opinions already expressed were sufficient to show that the subject was a very complex one. He, too, had found the practical working of the bacteriological diagnosis of diphtheria far from satisfactory, unless it were considered in connection with the clinical evidence. Something more than the Loeffler bacillus was necessary to constitute the disease, diphtheria. He recalled a case in which these bacilli had been present in the throat for three or four months after an attack of diphtheria. Under such circumstances, he did not feel like sending the individual to a hospital for contagious diseases, nor, on the other hand, did he feel disposed to allow him to mingle with other healthy persons, especially with children. For the most part, his experience with the antitoxin treatment of diphtheria had been satisfactory, although he had had one case in which there had been symptoms like those described by Dr. Winters as occurring in the cases of septicæmia. It had not been claimed that the antitoxin of diphtheria had the power of influencing favorably other infections, and hence it was not at all improbable that Dr. Winters' bad opinion of this treatment was due to the fact that he had seen cases of mixed infection treated with it.

Dr. L. Emmett Holt said that he had observed the effects of diphtheria antitoxin in about twenty cases, for the most part occurring among small children in institutions, where the mortality had hitherto been about seventy per cent. With the exception of a small child with marasmus, every child treated with the antitoxin had recovered. He wished to protest against the slur cast on the bacteriological diagnosis of diphtheria; a complete diagnosis must be founded on both bacteriological and clinical evidence.

Dr. W. L. Somerset said, that as interne at the Willard Parker Hospital, he had had an opportunity of watching the cases. Many of the irregularities of temperature, and many eruptions before the introduction of the antitoxin treatment, had been referred to digestive disturbance; now, all was laid to the antitoxin. From a series of twenty consecutive, fatal croup cases in 1895, and a similar series occurring in 1894 at the same season of the year, he found that fifty per cent. of the former had died during the first six days, as against one hundred per cent. in the latter, or those treated without antitoxin. Moreover, in autopsies on croup cases that had been treated with antitoxin, it was not nearly so common to find the membrane below the larynx as in those not so treated.

Dr. H. M. Biggs, in closing the discussion, said that the fact that there had been 2,800 deaths in this city from diphtheria and croup during the past year, was a sufficient refutation of the charge that the present epidemic of diphtheria was of a mild type. It was not to be expected that diphtheria antitoxin would neutralize sepsis, bronchopneumonia, or anything except the diphtheritic toxæmia. Antitoxin was of value in croup cases by neutralizing the diphtheria toxin, and reducing the inflammatory swelling. All cases taken to the Willard Parker Hospital were first diagnosticated by some physician as diphtheria, and so far as he knew, all the cases included in his statistics had presented clinical, as well as bacterioligical evidence of diphtheria. The fact that there had been a sudden and marked lowering of the mortality rate in diphtheria in all parts of the world, since the introduction of the antitoxin treatment, was a strong point in its favor; and if a still more convincing proof were demanded, it was to be found in the reduction of the mortality rate in Paris from diphtheria, from sixty per cent. to eleven per cent. by the antitoxin treatment, and the rapid increase to the old rate of mortality immediately on abandoning temporarily the antitoxin treatment. At present, there was not a distinguished pathologist or bacteriologist in Europe who did not look upon the antitoxin treatment of diphtheria as the most important advance in therapeutics in recent times.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

Stated Meeting, April 11, 1895.

FLOYD M. CRANDALL, M.D., CHAIRMAN.

Nuclein.—Dr. Summers gave a short account of nuclein; which he termed "nature's normal anti-toxin." This substance is granular, and behaves with various staining agents like all cellular substances. To it was now attributed the so-called resisting power of the human organism to pathological processes. He had been engaged at the laboratory of the New York Board of Health, in making some interesting experiments on guinea-pigs with nuclein, obtained by a simple process from the thyroid and thymus glands.

What Shall the General Practitioner Do for Acute Otitis?—Dr. Edward B. Dench read a paper on this subject. (See p. 340.)

Otitis in Young Children.—Dr. James E. H. Nichols, in a paper on this subject said, that in children there were several elements favorable to the easy infection of the nasal passages. The young child not being able to blow the nose, the secretion accumulates, and if the little one be nursing, the act of suckling creates a vacuum in the naso-pharynx. On the first appearance of a nasal discharge, there should be prompt resort to cleansing measures. The child having been placed on its face and a little two per cent. solution of cocaine sprayed into each nostril, the olive-shaped nozzle of a fountain syringe is introduced into one nostril, and a two per cent. solution of boric acid, at 102° F., is allowed to flow in gently, and make its escape by the other nostril. The bag of the syringe should be only raised enough to cause the solution to flow, and about one pint of fluid should be used at one time. The head should be kept inclined forward until the dripping has ceased, after which the nose is to be wiped dry. Digital examination will quickly determine if adenoids are present in the throat.

Cause and Prevention of Deafness.—Dr. Gorham Bacon, in a paper with this title, reported the result of an examination of 203 children afflicted with ear affections, causing deafness. The cases were classified as follows: Cerumen, 10; foreign bodies, 4; acute catarrhal otitis media, 4; chronic catarrhal otitis media, 25; acute purulent otitis media, 37; chronic purulent otitis media, 85; mastoid disease and chronic purulent otitis media, 2; furuncle of the external auditory canal, 1; diffuse inflammation of the external auditory canal with mastoid disease, 1; labyrinthian disease, 5.

Twenty-five out of the thirty cases of acute catarrhal otitis media were due to cold or influenza; the balance to bathing or swimming. All the cases of sub-acute catarrhal otitis media were due to influenza. Eight out of the twenty-five cases of chronic catarrhal otitis had adenoids, large tonsils, or both. Among the thirty-seven cases of purulent otitis, one had adenoids, and two were apparently due to dentition. Among the cases of disease of the labyrinth, two were due to meningitis, and one patient had hereditary syphilis. Many of these 203 children were in poor general health, and consequently much aid was derived from constitutional treatment, with such remedies as cod liver oil, syrup of the hypophosphites of lime and soda, and syrup of the iodide of iron.

The writer of the paper said, that he thought that the examination of the ear in cases of scarlet fever, diphtheria and influenza was just as important as an examination of the urine; and the general practitioner should be competent to determine the existence of bulging or perforation of the membrana tympani. An early paracentesis, with free incision and thorough irrigation, constituted a most valuable method of treatment. In closing the paper, reference was made to two cases—one of an infant, in which the symptoms had led the family physician to suspect meningitis until he had examined the ear; and the other, in which there had been high fever and persistent tenderness over the mastoid process until the eruption of four molar teeth.

DISCUSSION.

Dr. Henry D. Chapin said, that he had seen photophobia, semi-stupor, and other symptoms of brain affection suddenly disappear after a paracentesis of the drum membrane. He referred to a rather singular form of nocturnal earache occurring in connection with acute tonsillitis, in which the examination of the ear was negative. Prompt relief was experienced in these cases from the administration of very small doses of the tincture of aconite at intervals of ten or fifteen minutes. He could not recall ever having seen any ear affections resulting from teething. In cases of chronic otorrhœa, the constitutional treatment was fully as important as the local treatment.

Dr. F. J. Bowles said that he had met with a large number of ear affections in connection with the various epidemics of grip, particularly, where there had been much follicular pharyngitis and tonsillitis. He believed there was no advantage in persisting in the use of hot water or the ice coil for more than thirty-six or forty-eight hours, if the result were negative. Early incision down to the bone, would frequently prevent the opening of the mastoid cells unnecessarily. In treating long-standing and obstinate cases of chronic otorrhœa, the physician should not overlook the fact that the condition may be kept up by the presence of adenoids. After perforation or incision of the drum membrane, an exuberant growth of granulations would sometimes obstruct the canal, and by interfering with drainage, cause a renewal of the pain.

Dr. John Dorning said that the physician should keep constantly in mind the fact that incessant crying in young children was almost always due either to hunger, or otitis media. He deprecated the use of the nasal douche, as in his practice he had seen it responsible on several occasions for an otitis media. He had never seen a case of otitis which he could attribute to teething.

Dr. Justin L. Barnes said, that in some instances, even when the mastoid cells had been invaded, the temperature would furnish no indication of the extent of the destructive process. Even though no pus were found after making the Wilde's incision, the physician need not regret the course he had pursued, for its early performance often prevented suppuration. As the drainage was apt to be imperfect when the pus was mixed with mucus, special attention should be given to the use of antiseptic irrigations under such circumstances. Where there was tenderness over the mastoid region, high fever, or imperfect drainage from the ear, he thought it was the part of wisdom for the general practitioner to seek a consultation with a specialist in aural diseases.

Dr. Oren D. Pomeroy said that one of the most valuable remedies for an acute otitis is the leech, the application of which not only relieves the pain, but removes the hyperæmia, and is therefore distinctly curative. For a very young and delicate infant, it was not wise to allow the leech to become quite full, but ordinarily for a child, two or three leeches should be applied to the tragus. If the leech-bite bled freely, it could be controlled by pressure with the finger, or by the application of a few fibres of cotton, or even of a cob-web. He saw no objection to the use of hot poultices, if they were not kept up long enough to cause maceration of the parts. He desired to draw special attention to the fact that after the intense pain of an otitis had continued for two or three days, the patient became profoundly depressed and passed into a sort of semi-neuralgic condition. For the treatment of this condition, he had found no treatment so satisfactory as the free administration of alcoholic stimulants. Where there was any great objection to their use, the sulphate of cinchonidia might be substituted. As his experience had taught him that a purulent otitis not infrequently followed puncture of the drum membrane, he did not now resort to this procedure so often as formerly. In cases of mastoiditis in children, the external table became necrotic at a very early stage, and therefore it was his practice to resort to early incision. He could not agree with those who had said, that it was an easy matter for the general practitioner to inspect and puncture the drum membrane.

Dr. Dench said, that he could heartily endorse what the last speaker had said about the great value of free stimulation in cases where the long-continued pain had caused great depression. Paracentesis of the drum membrane was entirely different from free incision, and was worse than leaving the case to nature. If strict cleanliness were observed, not only before the operation, but during it and after it, there was no reason why the discharge should become purulent. It was not necessary for the general practitioner to be able to recognize the finer landmarks of the drum membrane, before he was competent to incise it; all that he was required to do in these cases was to recognize bulging or inflammation. Where the operation was to be done on children, it was better to administer chloroform. There was a form of nocturnal earache, which was simply due to serous effusion ; and required no treatment for its removal. He could not but look upon the nasal douche as dangerous, and he would employ it in diphtheria, only as the choice between two evils.

Dr. Nichols again insisted that the nasal douche was perfectly safe, if it were carried out in the manner he had described. After irrigation of the ear, care should be taken that the canal is well dried with cotton, and then a little of the compound stearate of zinc powder should be insufflated into the canal. Those who desired to employ dry heat about the ear, or in fact on almost any part of the body, would find the simple and inexpensive hot water coil devised by Mr. Hall, of Providence, a very convenient apparatus.

Dr. Bacon said that he had never seen any reason to believe that hot moist applications did any harm in the early stage of otitis media in young children, and he was sure that they often gave prompt relief. The earache occurring in acute tonsillitis was probably the result of obstruction of the eustachian tube, and consequent retraction of the drum membrane. He preferred the artificial leech to the natural leech, as the bleeding from the bite of the latter he had known to be very serious. In the early stage of an acute otitis, particularly when it was the result of a cold, he favored the administration of tincture of aconite.

WM. L. STOWELL, M.D., *Secretary.*

Quarantinable Diseases.—In the Inter-State quarantine regulations recently issued by the Treasury Department, the quarantinable diseases are declared to be: Cholera, Yellow Fever, Smallpox, Typhus Fever, Leprosy, The Plague.

Keeping Qualities of Milk.—It is highly important that physicians should bear in mind that in cows' milk we have an animal secretion requiring intelligent care, in order to prevent changes which render it unfit for use. It is delicate in its constitution, and sensitive to vigorous chemical or thermic treatment. Its keeping qualities are favored by a temperature which does not vary, and which is maintained at or about 50° Fahrenheit. The milk should be kept in *clean* vessels, and in a dry atmosphere free from odors.—*Coit.*

Current Literature.

I.—MEDICINE.

Rotch, T. M: Chemical and Pathological Characteristics of Milk. (*Med. and Surg. Reporter*, 1895,, lxxii., 7.)

The infants' digestive functions have been from time immemorial adapted to the digestion of an alkaline or neutral fluid, not to an acid one. Human milk is the food on which the greatest number of infants live and thrive, and on which the smallest number die proportionately to any other known food. Whether the moderately alkaline reaction of this milk is an important factor in the problem of infant feeding, is a question not yet decided. We should at least be very suspicious of an acid breast milk. The best results obtained in artificial feeding are those in which the food is alkaline in reaction. This is usually accomplished by the addition of an alkali. Mr. G. E. Gordon in the course of extensive observations of milk, found that cows fed in certain parts of Kentucky upon blue grass, and also in other parts of the west, produced a milk which was alkaline and which remained so for a number of hours after milking. Analysis of this food showed its composition of nitrogenous and carbo-hydrate elements to be in the proportion of one to five and one-third. It is known that cows fed on comparatively dry foods produce comparatively acid milk. Extensive experiments prove that cows fed freely on sugar beets, which supply a large amount of carbohydrates, produced a faintly alkaline milk. These experiments were conducted with the utmost care, with a large herd for three months, with the following uniform results: The cows fed partially on beets showed neutral or faintly alkaline reaction; the cows that received no beets showed a uniformly acid reaction.

This milk was carried twelve miles. The milk from one-third of the herd which had been fed on beets, was added to that of the other two-thirds. The reaction was even then found to be faintly alkaline. This is of great interest as showing that the product of the cow can not only be made to correspond in reaction to that of human beings by means of perfectly natural feeding, and under perfectly normal conditions, but that this alkaline modification can be produced to such a degree, that one-third of the milk is sufficient to destroy by its alkalinity the acidity of the remaining two-thirds.

A further very interesting series of experiments was undertaken to determine the source of the bacteria which are found in milk. It was found that the direct milking of the first half, performed by sterile hands with strict antiseptic precautions showed a milk with a comparatively large number of micro-cocci and fine bacilli. It was found further, that the milk drawn through a sterile canula was practically sterile, and that the milk drawn in the second half of the milking by hand was uniformly sterile. These experiments provided us at once with a means of producing a milk practically sterile but not sterilized. This experiment also seems to prove that the bacteria which are found in cows' milk do not necessarily come from external sources, whether they be of the cow herself or of her surroundings, but that they may also come from some part of the milk tract between the udder and the end of the teat.

Blackader, A. D.: Infantile Scurvy with the Report of Two Cases. (*Montreal Med. Jou.*, 1895, xxiii., 9.)

The first patient, an infant of twelve months, was first seen in November. At six weeks of age it had been weaned and had been successively fed on six different infant foods. On the seventh kind of food the child was apparently improving, but it was noticed that attempts to move the lower limbs caused pain. A short time afterward swelling was noticed above the right knee and a bluish spot appeared over the head of the tibia. A few days later a spot appeared over the other knee. They were supposed to be due to injury. When seen by the writer the infant cried at the slightest movement of the legs, and there were large ecchymosis near each knee. Just above the right knee the limb was swollen, firm, and resisting to the touch. The circumference was three-eights of an inch greater than that of the opposite side. The left leg was tender and slightly swollen. No attempt was made by the child to move the limbs but the patellar reflexes were normal. Two lower incisors had been cut. The gum surrounding them was of a deep bluish red color, bleeding easily when touched. The upper incisors were not through, but the mucous membrane over them was reddened, and over the edge of the two teeth last through it was of a deep bluish tinge. There were slight evidences of rickets.

A tablespoonful of orange juice slightly sweetened and diluted was given. A mixture of fresh milk and cream with thin barley water was ordered, and a desertspoonful of beef juice was given once a day. Three days later, the mother reported the infant to be almost well. The tenderness on movement had passed away, the ecchymosis has almost disappeared, and the child slept quietly. Eight days later the gums were perfectly healthy, the legs were freely moved and showed but little swelling.

The second patient was eleven months old. Five weeks before, pain on moving the legs was noticed. It was later treated for rheumatism without any favorable result. When examined by the writer the child cried bitterly at any attempt to examine the legs. The gums were similar in appearance to those of the first case. The child had been fed on flour and thoroughly boiled milk. The treatment was the same as that adopted in the first case. Improvement was noticed on the second day; the recovery was rapid and permanent.

In the discussion which followed the paper Drs. McConnell, Cameron, Morrow and Orr each reported a case of scurvy which had appeared in their own practice. The paper closed with a review of the work on scurvy done by Gee, Barlow, Chealde and Northrup.

Bridge, Norman: Sources of Injury to the Nervous System of the Modern Child. (*Journ. Am. Med. Assoc.*, 1895, xxiv., 8.)

Among the prevailing nervous affections of modern life are: 1, Nervous and mental weakness shown on slight exertion, so-called nervous prostration; 2, Tendency to pain, especially in the head and back on the slightest overwork; 3, Hysteria in some of its many forms. There is a close connection between these symptoms and the prevailing habits of the people. The nervous strain involved in modern life is far greater than that of former times. The hysterical tendency grows by what it feeds upon, and many of these nervous conditions develop from the habits of the earliest months of life. There has unquestionably been a change in our methods of dealing with children. Formerly they were more commonly taught to be seen and not heard. Now we rush the most promising children forward. They are, on the whole, made far more prominent than they were formerly.

Parents are often willing to mortgage the future happiness of their children for present and often temporary pleasure. While the author does not condemn this tendency of making childhood prominent, he sees in it many dangers to the nervous system.

What is the remedy?

1. Give the child the best possible physical health. Relieve him of every local irritation. Send him into the open air.

2. Good bodily and brain health can be obtained only by long hours of sleep. Other things being equal, no other rule of childhood is more essential than this.

3. Give him every good thing and every pleasure that will aid his development and strength for the race of life; this will give him a childhood happy enough, and blessed to look back upon. Be candid and honest with him.

Following these rules will involve the omission of certain things in the lives of certain children. Every indulgence that will minister greatly to excitement and mental exhaltation must be refused. Stop walking with the baby and rocking him to sleep. Tend to his normal wants carefully and regularly, then put him to bed and let him alone. He will have more and better sleep and gain in nervous strength. Do not show off a child and draw him out in company to do smart things. It panders to his vanity, and develops the hysterical disposition. Do not boast of his exploits in his presence. It engenders his pride, and pride is a vicious emotion in children as in adults. Do not personally embarrass a child and lead him to think that bashfulness is a sin. Do not nag him continuously, and above all things do not humiliate a sensitive child in public.

For a child of nervous temperament reduce mental excitement to a minimum. If greatly excited by play with other children compel him, if possible, to be alone for certain hours and to amuse himself. A child who plays furiously and to exhaustion, who eats and sleeps poorly may often be made a new person by being compelled to stay in the house for an hour in the middle of the day, and by being sent to bed earlier.

It is not well for a child to be always amused and pandered to by others. Let him learn to do something for himself. The brain of every child that is worth much is active and sufficiently imaginative. We are not called upon to increase the normal activity of his brain cells and wear out the powers which ought to be reserved for the more useful years of adult life or to make a new world of imagination. All the sweet memories of fairy tales are a beggerly compensation to many sensitive children who have acquired with such tales a belief in hobgoblins and ghosts, by which they are nightly terrified for years. It is not a reply that it is unfair to deprive the child of imagination. No one ever succeeded in doing that. Let him build up his own imaginative world out of the actualities about him, and he will come to mature years with a more wholesome and promising mind. The author declares it to be farthest from his intention to deprive the child of his pleasures. Wholesome pleasures he believes in, but he would avoid those which wear him out, give him troubled dreams and make him sick.

The sin of modern society is, that it is doing its utmost to give its children the same character of excitement which adults indulge in, only under a different color and lesser degree, and then wondering that we have among us a growing army of neurasthenics and mental invalids.

Flexner: The Bacteriology and Pathology of Diphtheria. (*American Journal Medical Sciences*, Vol. cix., No. iii.)

The first question of importance considered in this article is that relating to the proportion of cases of pseudo-membranous inflammations of the throat, which are due to Loeffler's bacillus. In the first series of cases reported by Loeffler, a certain number examined did not yield the diphtheria bacillus. This failure to find the bacillus in all pseudo-membranous inflammations has been the experience of many other investigators. In a table prepared by Eserich, among six hundred and seventy-nine examinations, the Loeffler bacillus was found in four hundred and twenty-seven, or sixty-two per cent. Morse, of Boston, examined three hundred and one cases, and found the bacillus of Loeffler in two hundred and seventeen, or seventy-two per cent. The pseudo-membranous inflammations associated with the acute exanthemata are not caused by the Loeffler bacillus, but are, in the majority of cases, due to the presence of the streptococcus-pyogenes. Measles, pertussis, and the acute exanthemata predisposes, however, to the true diphtheria. Regarding the so-called cases of membranous croup which show no membrane above the larynx, about eighty per cent. have been shown to be due to the diphtheretic bacillus.

A most important result of the bacteriological study of throat inflammations has been the demonstration of the presence of the Loeffler bacillus in cases of simple angina, and in follicular tonsillitis; from these, severe forms of diphtheria may arise in others. Cases of latent diphtheria have been described as occurring in those suffering from the wasting diseases, such as malnutrition, tuberculosis, etc. The symptoms are gastro-intestinal disturbances, slight nasal and bronchial catarrh. Roux and Martin, in the course of their inoculation experiments on animals, found that there was a marked lack of resistance in animals which had been previously inoculated with bacteria; pregnant animals and those that had recently given birth to young also showed diminution in resistance.

The bacillus has been found upon the conjunctiva, in the pus from the middle ear, and in the throat; in the latter without the slightest evidence of disease. The skin surfaces appear to be immune when there is no loss of continuity; wound infection has been observed by many. The author has made the pure cultures from the heart's blood, cervical lymph glands, liver, spleen, lungs, kidneys, broncho-pneumonic areas, and he was able to demonstrate them in sections from the bronchi and lung tissue.

A case of great interest has been reported by Howard, in which a bacillus, resembling in all respects the Loeffler bacillus, except that it did not possess the pathogenic powers for guinea pigs, was cultivated in large numbers from the heart valves in a case of acute ulcerative endocarditis, and from the infarctions in the spleen and kidney. While a few of the bacilli may penetrate the body, there are undoubted instances in which the disease has pursued a fatal course when localized in the mucous membrane, and so the local process must be considered the chief seat of activity for the organism.

The poisonous effects of diphtheria on the human body are due to a toxin, a soluble poison, which is produced during the growth and development of the organism. With the toxin separated from the living bacilli, all the constitutional effects of diphtheria can be induced; for the production of the false membrane, the presence of the bacillus itself is necessary. The toxin belongs to a class of substances, albuminous in nature, for which the name of tox-albumins has been suggested. Animals inoculated with this diphtheretic tox-albumin presented all the symptoms of diphtheria, including the post-diphtheretic paralysis. The effects of this poison on individuals appear to vary greatly. In the blood of certain persons, and in animals as well, there appears to be a protecting substance. This power of withstanding the disease is much greater in adults than in children. The bacilli may possess various degrees of virulence down to complete absence of pathogenic power. Those cases of pseudo-membranous inflammation in which the bacillus is absent, are characterized by a mild course, their slightly contagious character, and low mortality. In Park's statistics—excluding those associated with scarlet fever—the death rate was 1.7 per cent.

The study of convalescent cases shows that virulent bacilli may persist for some time after the disappearance of the membrane. They may often be found after two or three weeks, and have been found as late as the sixty-fifth day after the membrane has entirely gone. In cases involving the nose, they seem to remain longer. All cases should remain isolated until three weeks after the disappearance of the membrane. The bacilli are capable of remaining alive, and of causing infection for a considerable time outside of the body. Drying and exposure to light are unfavorable to the preservation of vitality; but in bits of mucous or mucous membrane, particularly if kept in a dark, damp place, they may remain there for a long time; upon old cultures from five to fifteen months, in pieces of membrane from five to fifteen weeks. They have been cultivated from table-ware and toys, from soiled linen, from the shoes and hair of nurses, and from the broom used to sweep the diphtheria ward.

Cases of poly-infection, the association of the pyogenic cocci, are by no means uncommon. The presence of the pyogenic germs are of considerable importance, as it is these, particularly the streptococci, that invade the lymphatic system, and the organs of the body, giving rise to a mixed infection. Broncho-pneumonia, suppuration of lymph glands, and septic forms of diphtheria, are attributed to these associated bacteria. The virulence of the Loeffler bacillus appears to be increased when it is grown with the streptococcus, and in the filtrate obtained from streptococcus cultures.

The lesions in the internal organs following diphtheria, as described by Oertle, consisting of foci of cells, death characterized by destruction and fragmentation of cell nuclei, have been confirmed by Welch and the author. The experiments were made upon guinea pigs, kittens and rabbits. Subcutaneous inoculation of the cultures of the organism, or of the filtrate of a bouillon culture produces in four or five weeks, besides the local lesion, foci of the cells, death in the lymph glands, in the spleen, liver, lungs, heart-muscle and intestinal mucosa. The kidneys also show degenerative changes. Interesting changes have been observed as occurring in the nerves. Martin found defects in the myeline sheaths, which stained poorly in osmic acid; in a few severe cases the sheaths had entirely disappeared. The axis cylinders were either intact or had undergone granular degeneration, and some of the fibres had become broken. At times the muscles supplied by these nerves showed fatty degeneration. The heart is not uncommonly involved, and it is the muscular structure that suffers, and perhaps with it the nervous mechanism.

The author states, in conclusion, that in the last decade, by the employment of modern methods of research, more light has been thrown upon diphtheria than had been gained in the half century which has elapsed since it was described by Bretonneau; that there is no other infectious disease which has been rendered so clear in its etiology and pathology, so amenable to prophylaxis, and in the treatment of which so much is now promised.

Guinon & Rouffilange: A Case of Membranous Angina Treated with Roux's Serum; Death with Anuria and Uræmic Convulsions. (*Rev. Mens. des Mal. de l'Enfance*, 1895, iii.)

A little girl, three years old, with thick membranous exudate on tonsils, faucial pillars and anterior nares, received 15 c.c. of serum on the third day of the disease. On the following day the membrane had not increased, and seemed to be less adherent. An erythema appeared on the trunk and lower extremities, restlessness developed, and the urine contained some albumen; second dose of 5 c.c. of serum. The local condition remained the same; urine less abundant, albumen increased; more prostration; 10 c.c. injected. The next morning complete anuria came on, with fetid diarrhœa and vomiting; the local condition remained unchanged. While baths, wet packs and saline injections caused some improvement of the urinary symptoms for two days, the general condition grew worse, and the temperature rose to 39.3°C. A fourth dose of 10 c.c. of serum was injected. The child died the following day in coma, after repeated tonic convulsions.

The writer (G.) thinks that the serum aggravated, if it did not cause, the urinary condition ; and concludes that when the kidney is the seat of an intense nephritis, whether the result of diphtheretic intoxication or streptococcus injection, it is wrong to surcharge that organ by obliging it to eliminate new poisons, such as are contained in the serum.

Accident prevented a bacteriological examination of the throat from being made—a fact which the authors regret.

Lebreton: A Case of Infantile Myxœdema. (*Gazette Medicale de Paris*, Jan. 19th, 1895.)

The boy was three years old, born at full term, and without hereditary taint. Soon after birth the extremities became cold, cyanotic, and œdematous. At two years of age the tongue became swollen and tumefied, protruding from the mouth so as to render alimentation impossible. There was some rickets, the child could not walk. The thyroid body was absent, and the rectal temperature measured 34.7°C.

Treatment was begun with twenty centigrammes of sheep's thyroid, and some nervousness and agitation resulted. The dose was omitted one day, then repeated the second day, with good results. On the seventh day the temperature rose, intelligence improved, and the tongue could be kept within the mouth. An attempt to suspend the treatment was unsuccessful,and the dose had to be given every second day.

Examination of the blood before treatment showed 1,750,000 red corpuscles, and 4,500 white corpuscles, while the hæmoglobin measured 0.65 per cent. Six weeks later, during the period of active treatment, the red cells numbered 2,450,000, the white cells 9,600, and the hæmoglobin reached 0.68 per cent. In dried specimens the first examination showed that the red cells had a diameter greater than normal, and that some nucleated ones were present. At the second examination both of these abnormalities had disappeared. The relative number of the mononuclear to the polynuclear leucocytes was at first below the normal,while the lymphocytes were increased in number. At the later examination there was marked improvement.

The presence of nucleated red blood corpuscles is explained by the fact that in these cases there is a persistence of the fœtal process of blood formation; that is, an arrested development of the blood.

Mirinescu & Bobulisco: A Case of Internal Strangulation by Meckel's Diverticulum, Followed by Intestinal and Peritoneal Perforation in a Girl of Four Years. (*Rev. Mens. des Mal. de l'Enfance*, 1895, I.)

The illness began with abdominal pain, followed by obstinate constipation, anorexia, vomiting (not fecal), and rapid emaciation. Purgatives were given without effect, and death occurred in collapse on the eighth day. The abdomen was distended, tympanitic, and tender.

At the autopsy, fetid gas and fecal matter were found in the peritoneal cavity; the stomach and small intestines were greatly distended. In the ileum, forty-seven centimetres above the ileo-cœcal valve, there was a diverticulum ten centimetres long, conical in shape and pervious for seven centimetres of its length, the calibre being smaller than that of the intestine. Its contents were feces and mucus, and its apex was inserted into the mesentery. This abnormal appendix was twisted like the figure 8, imprisoning a portion of the ileum twenty-five centimetres in length, greatly distended with feces and gas. Near the base of the diverticulum there existed a millet-seed-sized perforation, through which fecal matter escaped. A large ascaris was found near the strangulated portion of the ileum. Some Peyer's patches were swollen and ulcerated. The large intestine was not distended; mesenteric lymph nodes were large, hard and congested.

As to the perforation of the intestine, there was no gangrene; but the presence of ascarides, lumbricoides, together with the congestion of the mucous membrane and the ulceration of the Peyer's patches, give strength to the hypothesis that the worms contributed to the perforation.

Damourette: Affections of Nurselings Following Galactophoritis of the Nurse. (*Rev. Mens. des Mal. de l'Enfance*, 1895, I.)

Galactophoritis is an intra-canalacular inflammation of the mammary gland, almost always insidious in its onset. The general symptoms often mask the local ones for a day or two, so that the infant becomes infected by the milk before the disease is recognized.

Pus in the nurse's milk may affect the nurseling in one of several ways, causing: *1. gastro-intestinal disturbances* (mild or severe dyspepsia; febrile, infectious diarrhœa; cholera infantum); *2. inoculation of mucous membranes* (stomatitis; retro-pharyngeal abscess; otitis media; catarrhal or purulent conjunctivitis; sub-maxillary abscess; multiple sub-cutaneous abscesses of the head or neck); *3. peri-anal inoculation* (abscesses of the thighs and buttocks); *4. cutaneous inoculations* (furnucles; ecthyma; external otitis); *5. pyo-septicæmic disturbances* (sub-acute septicæmia, without digestive symptoms or local manifestations; deep-seated, multiple, sub-cutaneous abscesses).

Merfan: On a Case of Fatal Asphyxia Due to Hypertrophy of the Thymus in a Girl of Two and One-Half Months. (*Bulletin Médicale*, 1894, p. 495.)

The child was admitted after being ill for two weeks; the symptoms were cough and constipation, and a single convulsion which was not repeated. Finally, restlessness and progressive asphyxia developed. The dyspnœa simulated that of broncho-pneumonia. Nothing abnormal was found in the chest, nor was there any evidence of diphtheria.

At the autopsy, the thymus gland was found much enlarged, causing a compression of the trachea at the junction of its cervical and thoracic portions. On raising the thymus, the flattening of the trachea disappeared in part, but a visible depression remained. The gland weighed thirty-one grammes, and measured eight centimetres in length; it was congested, and presented some small ecthymoses. The only other lesions found were those of asphyxia. Death resulted from the mechanical effects of the large thymus.

Kleiner: Two Cases of Tetanus Neonatorum; Recovery. (*Gross Bulletin*, 1895, iv., I., 7.)

The cases were twins. Labor lasted but two hours, and was natural in every respect. The sanitary surroundings were good, and antiseptic precautions were observed, both during and after labor. On the fifth day one child became unable to nurse, and in twelve hours had fully developed tetanus. The umbilicus showed no abnormal condition. The child was immediately isolated from the mother and well child. The umbilicus was dressed antiseptically, and the usual sedatives were given, together with hot baths and enemas of pancreatinized milk. During four days the patient rapidly became worse, and on the demand of the mother, was returned to her. In twenty-four hours the other child developed the same symptoms, though the umbilicus was dry and entirely healed. The treatment now, for both, was hypodermic injections of a one-tenth of one per cent. sterilized salt solution, two ounces being given every three hours, together with one four-hundreds of a grain of the hydrobromate of hyosine, also given hypodermically, the effect on respiration being carefully watched. Recovery was uninterrupted.

Paget: A Case of Mynositis Ossificans. *Lancet,* 1895, 339.)

The patient was seven and a half years old. Neither father or mother were rheumatic nor gouty, but a grandfather and a grandmother were rheumatic. One maternal aunt died from cancer of breast. The patient, the eldest of three, was born with a deformity of both great toes—they are short, and turned beneath and behind the second toe. The present condition began when he was four and a half years old, with a swelling behind the left ear, followed by growth of bone in the pectoral muscles and down the spine. The sterno-mastoid, latissimus dorsi, deltoid, biceps, and serratus magnus also became involved, to a certain extent.

The disease seems now to be advancing very slowly, and most of the bony masses appear to be closely united to the skeleton. Treatment in the shape of diluted phosphoric acid and thyroid extract has accomplished nothing.

A similar case, with a similar family history (rheumatism and cancer) is recorded in Vol. xix. of the Transactions of the Clinical Society of London. This child also had the peculiar deformity of the toes.

Jessop, W. H: Two Cases of Diphtheretic Conjunctivitis Treated by Klein's Antitoxin. (*Lancet,* 1895, 347.)

The patients were infants, one nineteen months, and the other eight months. Examination of the membrane in both, showed quantities of Loeffler's bacillus. The older child had three injections, one and a half drams in all, the membrane disappearing in five days. The only local treatment was distilled water. The younger child had two injections, one dram in all, and the membrane disappeared in four days.

Thompson, John, and Dawson, W. R.: A Case of General Paralysis of the Insane in a Child. (*Lancet*, 1895, xxx, 397.)

A girl, aged eleven years and five months, was brought to the dispensary of the Royal Hospital for Sick Children, Edinburgh, on Dec. 7th, '92. The mother said her daughter, for past nine months, had been constantly shaking and unable to do any lessons, The father was strong and healthy, with no venereal history. The mother was nervous, excitable and intemperate. The mother's brother became insane in old age.

The patient was the youngest of seven children. One had died from hydrocephalus ; two, immediately preceding the patient, were still-born ; the eldest suffered from abscesses ; the others were alive and healthy. None of the children had had snuffles or a rash during infancy. The mother had good health during pregnancy and never had a miscarriage.

The child never had any symptoms suggestive of syphilis, and was always looked upon as strong and healthy. As far as known she had no bad habits or mental peculiarities. She was a bright, affectionate child, and did good work at school.

Up to the time of her promotion at school nothing abnormal had been noticed. Soon after promotion it was noticed that she was unequal to her work, and after a few weeks was put into her former class. Here she was unable to do work she formerly understood well. At home the same change in her general condition was noted. Examination showed her fairly well nourished, but undersized and poorly developed. No sign of congenital syphilis could be found.

There was absence of expression about the upper part of face. Her attitude was a dejected one. She kept her hands closed tightly. When walking her knees were bent and rather far apart, and she took very short steps. The viscera were all apparently normal.

Her muscular movements are accompanied by a coarse tremor, shown especially in movements of her hands and tongue. The eyes showed some hypermetropia, but there was nothing abnormal about the fundus. Hearing not good, especially on left side. The knee-jerk was equally present, but not strong.

Her comprehension was slow; it was necessary to tell her several times to do a thing before getting a response. She was annoyed by her stupidity and reddened when she made a mistaken answer or failed to do some simple act.

During the first few weeks she was under observation she had many hallucinations and delusions. In Januury, 1893, a distinct temporary improvement occurred There was less tremor of the muscles, and she responded more quickly when spoken to.

In February, percussion on the cheek below the malar bone showed marked "facial irritability," precisely similar to that obtained in cases of tetany and laryngismus. The pupils became more distinctly irregular in outline.

Towards the end of February she became worse in every respect. The trembling was such that she could not feed herself. There was incontinence of urine night and day.

On April 9th, it was noticed that she constantly held her body over to the left side when sitting or standing.

From that time to the end there was a gradual decline, though occasionally, for a few weeks at a time, there would be quite a marked improvement. After November she was confined to her bed entirely, and lay with both legs flexed on her abdomen. Two months later the right leg could not be extended, while the left could be extended almost entirely. Her temperature was only slightly elevated, while the pulse and respirations were considerably accelerated.

On July 18, 1894, she became unconscious, and remained so till her death, July 22. During the last two days there was constant rhymthical rotation of the head to the left, and movement forward and inward of her right upper arm at the shoulder joint.

Pathological Report.—The necropsy confirmed the diagnosis.

The dura was adherent to the skull-cap, especially along the superior longitudinal sinus.

The sinuses and veins leading to them were much engorged. The dura was everywhere thickened, and in some places was separated from the bone by a false membrane, the latter a somewhat rare condition. The dura over the whole cerebrum was lined with a false membrane, being thickest over the parietal regions, where it was nearly a quarter of an inch thick.

This membrame was adherent to the arachnoid, though not firmly. The pia-arachnoid was congested, especially along the vessels. There was considerable sub-arachnoid fluid, so that the brain had a jelly-like appearance.

There was marked superficial atrophy of the brain, most pronounced in the frontal and parietal regions. The encephelon, as a whole, was small, weighing with a small portion of the cord only twenty-six ounces.

Section showed a congestion both of the convolutions and ganglia. The cortex was tough, though atrophied, while the ganglia were soft and pliable. The ventricles were dilated and contained some turbid fluid.

Owen, Edward: Dipththeria and Domestic Animals. (*Medical Mirror*, 1895 vi, 1.)

The author states, with indisputable proof, that cats, dogs, pet birds and fowls are subject to diphtheria; that children or adults, fondling their afflicted pets, may contract from them diphtheria. He is of the opinion that when a domestic dog, kitten or cat, bird or monkey, is sick, it should be taken far out of reach of children, and the propriety of returning it when convalescent, is decidedly questioned.

Blech, G.: Therapeutics of Cholera Infantum. (*N. Y. Med. Jour.*, 1895, xli., 9).

Three rules should be observed in the treatment of this disease: First, remove, if possible, the cause; second, treat symptoms which *per se* are liable to endanger the life of the patient; and third, sustain vitality. The first is to be fulfilled by restricting the diet, and prohibiting food entirely at first. Not only will this prevent increase of the disease, but it will do much to diminish its severity. The ordinary drugs are of but little avail, especially if other measures are not also employed. The author is a strong believer in the value of rectal irrigations and stomach washings. For irrigation of the colon he uses plain cold water with a small amount of peroxide of hydrogen or hydrozone. The fluid is carried high up with a soft rubber catheter. He repeats the irritation every two hours, if necessary, but has rarely failed to see improvement after the first few irrigations. He washes the stomach with the same solution, and seldom finds it necessary to repeat the operation, the vomiting ceasing, as a rule, after the first washing. He uses no antipyretics. If the temperature is high, and is not reduced by the cold irrigations, he bathes the body with alcohol.

Warner, F. M.: Anaemia in Children. (*Medical Record*, 1895, xlvii., 8.)

The paper deals with simple anaemia only. In this condition the proportion of hæmoglobin is diminished to a much greater extent than are the red blood-globules. Chief among the various causes of the condition are mal-nutrition secondary to graver disorders, improper and scanty food, faulty hygiene, and a condition of uricacidaemia. The author agrees with Rachford that pronounced anaemia without apparent cause is strongly suggestive of concealed tuberculosis. The condition is frequently due to deep-seated and hidden glanular tuberculosis.

In simple anaemia the hæmoglobin is reduced; the red blood cells may or may not be diminished in number; the total bulk of blood may or may not remain the same. The initial symptom is therefore, pallor, the color rangeing all the way from simple whiteness to dusky yellow. In many cases this is shown chiefly in the lips, gums and roof of the mouth. The pulse is frequently full and soft, the heart's action irregular. A venous hum is commonly heard over the jugulars.

Diagnosis must be made from chlorosis, pernicious anaemia, leukaemia, beginning tuberculosis, and acute Bright's disease. In chlorosis, which is extremely rare in young children, the color is characteristic. In pernicious anaemia the red blood corpuscles are greatly decreased in number. The white corpuscles are also somewhat diminished. In leukaemia, a very rare disease in young children, there is a steady decrease in the number of red blood cells with a constant and steady increase in the number of white cells; the liver, spleen and lymphatic glands are enlarged. In the managment of anaemia fresh air, regular exercise, and fatty food are especially indicated. The two drugs which are most efficacious in the treatment of anaemia in young children are iron and arsenic, which should be given sparingly in tonic doses. In those forms of anaemia which are more or less clearly intestinal antiseptics should be administered.

Strauss: Antipyretic Action of Lactophenin. (*Univ. Med. Magazine*, vii., 5, 1895.)

The author in a paper in the *Therap Monatshef*, reports his experience with this drug in two cases of diptheria, one being septic in character. The temperature fell nearly 2° C. within five hours. In three cases of pneumonia its antipyretic action was noticeable. In one of two cases of scarlet fever it failed to act. In seven cases of typhoid fever in which he administered the drug, while the sedative effects were not so constantly observed as in von Jaksch's cases, it never gave rise to unpleasant symptoms. The dose was seven to fifteen grains in adults, and never exceeded forty-five grains a day. The antipyretic action was pronounced.

In five cases of phthisis it lowered the temperature and caused profuse diaphoresis, but produced no unpleasant effects. In one or two instances its use was accompanied with a diffuse rash.

Leyden: Ulcerative Endocarditis and Acute Articular Rheumatism. (*British Medical Journal, No. 1776.*)

Leyden (*Dent. Med. Woch.*, December 6th, 1894,) first sketches the history of the bacteriology of malignant endocarditis. Rheumatic endocarditis is rarely (directly,) fatal, and then only in a late stage, when the presence of micro-organisms is hardly to be expected. The fatal cases of rheumatic endocarditis may also be examples of a mixed infection. Although acute rheumatism is looked upon as an infective disease, yet bacteriological investigation has as yet given uncertain results. In four of the author's six cases of acute rheumatism, a diplococcus was found in the vegetations, quite different from other micro-organisms, such as the staphylococcus and pneumococcus. Günther looked upon this micro-organism as a special one not hitherto described. Details are given of these six cases in which death took place somewhat early in the disease. In two of these cases there was ulcerative, and in three a vegetative or verrucous endocarditis. In the remaining case, there were extensive foci, both cellular and fibrous in the myocardium, the valves being intact.

Furbinger: A Case of Tubercular Meningitis—Diagnosis by Lumbar Puncture; Recovery. (*Boston Medical and Surgical Journal*, Vol. C. xxxiii., No. 1.)

Fürbinger, in the *Deutsche Medical Wochinschrift*, reports a case in which the diagnosis of Tubercular Meningitis was established beyond a doubt. The case was that of a laborer, twenty years of age, who while in the best of health, was taken with severe headache and fever; various symptoms pointing to disease of the central nervous system lead to the diagnosis of meningitis. In order to establish the diagnosis, the author performed paraentesis of the spinal canal at the level of the second lumbar vertebra—60 c. c. of a slightly cloudy serous fluid escaped, in the sediment of which were found a few pus corpuscles and numerous tubercle bacilli. Contrary to all expectation, the fever subsided after the puncture, the sensorium became clear, and headache gradually disappeared as well as the rigidity of the extremities of the spinal column. Convalescence was uninterrupted and the patient was discharged cured. The therapeutic value of the lumbar puncture introduced by Quincke after numerous trials, still admits of doubt. The method is applicable for diagnostic purposes, and the more so, in that Tubercular Meningitis so often takes the cerebro-spinal form.

Tongue Traction. (*Medical Record*, Vol. xlvii., No. 11.)

Laborde reports a new and striking case of the value of his method of lingual traction. A child, born apparently dead, was treated for ten minutes by ryhthmic traction of the tongue, with complete success. The doctor was then obliged to turn his attention to the mother. Returning to the child, it was again apparently dead, All the usual methods of resuscitation were tried, without avail. Rhythmic traction of the tongue restored it in six minutes. Tarnier in commenting on the case, considered the method more generally applicable than insufflation.

Schmidt: Alveolar Sarcoma of the Soft Palate in a Twelve Year Old Boy. (*Archives Kinderheilkunde*, B. xviii., H. i., ii.)

A twelve-year-old boy had a growth about one and one-half c.m. long, and of about the same width on the left side of the hard palate. One year before, a similar growth had been removed from the same location. The tumor was covered with a deeply congested mucous membrane, and had the appearance of being malignant. It was removed and the wound closed. Microscopical examination of the tissue showed it to be an alveolar sarcoma. Four months after the operation the parts were perfectly normal.

Galtier: A Rare Case of Hæmorrhage. (*Klinische Rundschau Jahrgang*, viii., No. i., ii.)

The author reports the case of his own son, aged eleven, who had such a severe hæmorrhage from the nose, that the use of tampons were required to control it. As soon as the tampons had been placed in position the boy's eyes filled with blood, the blood having found an outlet through the lachrymal duct.

II.—SURGERY.

DeSaute: Hæmorrhage Following Tonsillotomy. (*Archives-Kinderheilkunde*, B xviii., H i., ii.)

A three year old girl, in whose family the hæmorrhagic diathesis was prominent, underwent the operation of tonsillotomy. McKenzie's instrument was used. The operation was followed by hæmorrhage, which continued for two days, and upon which the use of styptics were of no service. The Paquelin cautery was brought into use, and the bleeding ceased.

Both tonsils were removed from an eighteen year old girl. Severe hæmorrhage followed, from which the patient nearly lost her life. The hæmorrhage in this case was controlled by the application of tannin. In a search through the literature, the author finds that bleeding of a dangerous degree is very rare, and that a death from this cause had never been recorded. Severe hæmorrhage appears to take place more frequently in adults than in children.

Chaumier: Adenoid Vegetations in Children. (*British Medical Journal*, No. 1,777, p. 151.)

Chaumier (*La Med. Infant*, December, 1894), insists on the importance of recognizing and treating adenoid tumours of the naso-pharynx in children. In children who keep the mouth open day and night, who snore, who have high palates, prominent upper incisors irregularly placed, and prominent chests (tendency to pigeon breast); in children who are deaf, or liable to attacks of deafness, with, perhaps, earache; in children who are liable to frequent attacks of sore throat, or to attacks of coughing which the parents attribute to bronchitis; in children with night terrors, false croup, and spasm of the glottis, the physician ought to think of the probability of adenoid vegetations. Enlargement of the faucial tonsils is commonly accompanied by enlargement of the pharyngeal tonsil. Owing to its close anatomical relations with the opening of the eustachian tube, the affection of this tonsil may be a more important lesion than the enlargement of the faucial tonsils. Treatment of the faucial tonsils will have no effect on the overgrowth of the pharyngeal tonsil. Apart from the ear affections, which inflammation of the tonsils may determine, it may be the cause of ephemeral attacks of fever, which are often attributed in young children to teething, and in children a little older to " growing fever," to "ganglionic fever," or to gastric disturbance. Chaumier believes that adenoid vegetations may also be at the root of many cases of recurring tracheitis, bronchitis, and bronchopneumonia in children. The interference with the free entrance of air favors the development of the special microbes which are the immediate causes of these affections of the lungs. The same holds good, he thinks, for pneumonia also. Chaumier believes also that adenoid vegetations are the determining causes of the deformities of the chest observed in rickets, the softness of the bones rendering the results of long-continued respiratory obstruction more pronounced. The connection between night terrors and adenoid vegetations in the pharynx is shown, he says, by the fact that they are always to be found in children suffering in this way, and by the further fact that the night terrors cease or notably diminish immediately after the removal of the vegetations. To this list of troubles following on the obstructed condition of the naso-pharynx, he adds incontinence of urine, and various nervous symptoms commonly attributed to hysteria. Most children with adenoids are "nervous." As to treatment, he considers that medication is useless, and that surgical treatment is simple, safe and efficacious.

Trephining for Tubercular Meningitis. (*Boston Medical and Surgical Journal.* Vol. cxxxii., No. 1.)

A paper appeared in the *International Medical Magazine*, by B. Merrill Ricketts, on this subject. The operation done for the relief of intra-cranial pressure was done on the eleventh day of the disease in a case of meningitis, following an attack of pertussis. The patient was in poor condition, pulse was rapid, temperature high. Pupils did not respond. There was complete motor paralysis and retention of urine. No nourishment had been taken for twenty-four hours. There was paresis of the left facial nerve and of the muscles of deglutition. Emaciation was marked. Two openings were made with the chisel over the right and left parietal bones, respectively. On opening the arachnoid cavity large quantities of serous fluid escaped, and continued to flow. Immediately after the operation the child cried, and was able to move its limbs. The respirations fell from fifty to thirty, urine was passed freely, and sufficient nourishment was taken. The improvement continued for a few hours only, when the child began to fail, and died twenty-eight hours after the operation. The flow of fluid continued till death.

While the relief of cerebral pressure can be said to give these cases their only chance, death has so far only been postponed. Effective drainage will be found to be even more difficult in the case of the cranial cavity than in the abdominal. The impossibility of disinfecting these cavities, on account of their many ramifications and the delicate structure of their walls, in addition to their liability to rapid absorption of septic material, renders the successful surgical treatment of acute inflammation extremely difficult. Successful operations upon acute peritonitis are among the greatest rarities, and none upon acute meningitis has so far been recorded. It is a matter of extreme interest that the operative cure of chronic tuberculous inflammation, which has been accomplished in so many cases of abdominal tuberculosis, has been extended, in one case, to meningeal tuberculosis.

With regard to meningeal sepsis, Ricketts says: " As it is, nearly all these cases die without operation. The question now is, will any of them be benefited or cured if operated upon during any particular time in the course of the disease ?"

Cautley: Treatment of Empyema in Children. (*Lancet*, 1895, I.—V., 285.)

Of twelve cases treated by aspiration, one died, one ruptured externally, and one discharged through the lung. Of thirty-five treated by incision and drainage, seven died, while of thirty-three treated by resection and drainage, six died. In the cases treated by incision and resection, the ages were practically the same, and after treatment differed by only one or two weeks, in favor of resection.

Five out of six cases, under two years of age, treated by resection, died. The advantages of aspiration were in cases of urgency, cases with thin sero-purulent fluid, and in double empyema. The advantages claimed for resection were better drainage. facility for exploring the boundaries of the cavity, and breaking up loose adhesions, less danger of hæmorrhage, and better and more rapid chances of recovery. The disadvantages of resection were, that it was more severe, and, judging by the mortality, ought never to be done in children under two years of age, and that there was greater liability to pyæmia and deformity of the chest. It should be practiced only where the tube could not be inserted, and where drainage was imperfect, or for the cure of an old sinus. Tube should be short, and should be removed as soon as discharge became serous and scanty. Some favor irrigation, as it detaches and washes out a good deal of the thick lining membrane; others oppose the measure, claiming it acts as an irritant, leading later to restriction of chest movement.

Bauer, Louis: Congenital Dislocation of the Hip. (*Courier of Med.*, 1895, xii., 2.)

In considering the anatomical defects which accompany this condition the following are mentioned by the author:

(1) In infantile patients the anatomical defect is least advanced; (2) the structures concerned are pliable; (3) the reduction of the femur is a comparatively easy task; (4) its retention should be tried by placing and keeping the extremity in a position most favorable for that purpose—that is to say, in extension, abduction and eversion; (5) reduction is generally quite easy by extension. If this should fail,the ordinary method of reduction should be employed; (6) if retention cannot be enforced by the means suggested, then (7) the operation is legitimate and indispensable, by means of the methods of either Hoffa or Lorenz. The object of either is the creation of a new hip-joint and the removal of muscular resistance.

Shede and Mikuliecz favor the mechanical plan of treatment, and resort to operative measures in case of failure, or in protracted, long-standing cases. The mechanical plan commends itself for its simplicity, absence of all danger, and vouchsafing a more graceful gait than the operation is capable of effecting.

American Medical Association.

SECTION ON PEDIATRICS.

BALTIMORE, May 7–10, 1895.

EDWARD H. SMALL, Pittsburg, Chairman.
G. W. MCNEIL, Pittsburg, Secretary.

E. F. BRUSH. C. G. JENNINGS. W. S. CHRISTOPHER.
Executive Committee.

PRELIMINARY PROGRAMME.

SUBJECT TO REVISION BY COMMITTEE OF ARRANGEMENTS.

TUESDAY, MAY 7th, Afternoon Session.

1. Address of the Chairman. Edward H. Small, Pittsburg.
2. Typhoid Fever in Infancy and Childhood. Wm. B. Noyes, New York.
3. Typhoid Fever in Children. John Eliot Woodbridge, Youngstown, O.
4. The Graver Cases of Enteric Fever in Childhood. J. C. Wilson, Philadelphia.
5. Diagnosis of Typhoid Fever in Childhood. Wm. Osler, Baltimore.
6. Guiocol in the Treatment of Typhoid in Children. Adolph Stoenig, Pittsburg.
7. The Brandt Method in Children. Samuel S. Adams, Washington.

Discussion by Wm. Pepper, Philadelphia; J. A. Work, Elkhart, Ind.; J. C. Souge, Pittsburg; Geo. N. Acker, Washington; W. P. Northrup, New York; W. P. Watson, Jersey City.

WEDNESDAY, May 8th, Morning Session.

8. The Relation of the Klebs-Lœffler Bacillus to the Pathology and Epidemiology of Diphtheria. E. G. Matson, Pittsburg.
9. Lacunar Diphtheria of the Tonsils. Henry Koplik, New York.
10. Clinical Experience with Antitoxin in the Treatment of Diphtheria. Louis Fischer, New York.
11. Clinical Observations in the Treatment of Diphtheria with Antitoxin. A. Campbell White, New York.
12. False Croup. Starling Irving, Columbus, O.
13. The Sublination of Calomel in Laryngeal Diphtheria. J. Corbin, Brooklyn.

Discussion opened by C. G. Jennings, Detroit; J. P. Crozer Griffith, Philadelphia; I. N. Love, St. Louis; V. C. Vaughan, Ann Arbor; S. S. Adams, Washington; Prof. Klebs, Asheville, N. C.

WEDNESDAY, May 8th, Afternoon Session.

14. The Bacteriology of Summer Diarrhœa. Rosa Engelmann, Chicago.
15. The Diagnosis and Treatment of the Summer Diarrhœa of Infancy. V. C. Vaughan, Ann Arbor.

16. Chronic Gastro-Enteritis Complicated by Broncho-Pneumonia. A. Seibert, New York.

17. Diarrhœa of Infants. E. T. Brush, Mt. Vernon, N. Y.

18. Colitis in Infancy and Childhood. Edward Anderson, Rockville, Md.

19. Membranous Enteritis Associated with Ascaris Lumbricoides. Irving M. Snow, Buffalo.

20. Magnesium Sulphate in the Treatmeut of Diarrhœa in Children. Stuart Patterson, Pittsburg.

Discussion opened by E. P. Davis, Philadelphia ; W. D. Booker, Baltimore ; Henry Koplik, New York ; J. Madison Taylor, Philadelphia; T. D. Davis, Pittsburg.

THURSDAY, May 9th, Morning Session.

21. Antiphthisin in Tuberculosis in Children. Prof. Edwin Klebs, formerly of the Nursery of Zurich, Asheville, N. C.

22. Tubercular Meningitis. Wm. E. Lockwood, Baltimore.

23. Has Tuberculous Cow's Milk Causative Influence in Tuberculous Lesions of Infancy? Frank S. Parsons, Philadelphia.

24. The Difficulty in Recognizing Pneumonia, especially in Children. J. P. Crozer Griffith, Philadelphia.

25. The Treatment of Pleuritic Effusions in Children. C. Emmerling, Pittsburg.

26. The Treatment of Broncho-Pneumonia in Children. J. H. Williamson, Allegheny, Pa.

Discussion opened by E. T. Brush, Mt. Vernon, N. Y.; G. W. McNeil, Pittsburg; J. Wellington Byers, Charlotte, N. C.; Wm. Osler, Baltimore ; C. S. Shaw, Pittsburg; W. A. Edwards, San Diego, Cal.

THURSDAY, May 9th, Afternoon Session.

27. Some of the Causes of the Great Mortality in Infancy and Childhood. J. A. Work, Elkhart, Ind.

28. Modern Methods of Preparing Milk for Infants. W. D. Booker, Baltimore.

29. Some Points on Scorbutus in Children. I. N. Love, St. Louis.

30. Rachitis. C. S. Shaw, Pittsburg.

31. Developmental Needs of Children. J. Madison Taylor, Philadelphia.

32. Heredity and Its Environments. J. E. Rigg, Wilkensburg, Pa.

Discussion opened by Starling Irving, Columbus, O.; J. C. Wilson, Philadelphia; P. J. Eaton, Pittsburg; Frank S. Parsons, Philadelphia ; J. Corbin, Brooklyn; Louis Fischer, New York.

FRIDAY, May 10th, Morning Session.

33. Bromoform in the Treatment of Pertussis. P. J. Eaton, Pittsburg.

34. The Lithic Diathesis in Children. J. Wellington Byers, Charlotte, N. C.

35. Adenoids. J. Sauge, Chicago.

36. Double Club Feet and Hands, Treatment Illustrated by Photographs. Merrill Ricketts, Cincinnati.

37. A Paper (title not received). W. A. Edward, San Diego.

38. A Paper (title not received). A. C. Colton, Chicago.

ARCHIVES OF PEDIATRICS.

VOL. XII.] JUNE, 1895. [No. 6.

Original Communications.

A PEDIATRIC POEM.*

BY F. FORCHHEIMER, M.D.

INFANCY: OR THE MANAGEMENT OF CHILDREN.
A
DIDACTIC POEM,
IN SIX BOOKS.
THE FOURTH EDITION.
BY HUGH DOWNMAN, M.D.
EDINBURGH, 1788.

Such is the curious title of the curious little book to which I desire to call your attention. It is not a rare thing to find physicians who devote their leisure moments to the more intimate acquaintance with the muse; but it is rare to find one who has succeeded in causing Æsculapius to mount with Pegasus into ether. Most curious of all, is the fact that "Infancy" should have been chosen as a subject of poetical inspiration, to be invoked, as follows:

> "O Daughter of Philosophy; not Him
> Of gesture arrogant, and brow severe,
> Whose sullen, metaphysic eye, inwrapt
> In darkness, never deigns a cheerful smile
> To dissipate the gloom; but Him who leads
> Instruction by the Graces drest, attend!"

In this style does the author continue, alternately appealing to some God, Demigod or Hero, and anon to some mortal; using all figures of speech known to rhetoric, now and then appealing to some medical authority; but always with one object in view, that of imparting to his readers knowledge in regard to his subject. The book was very successful, at first being published in separate parts, (1774, 1775, 1776), then completely, in 1788, (the edition before us), and a seventh edition in 1809, two years after author's death.

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*The President's Address, delivered before the American Pediatric Society at its seventh annual meeting, at the Virginia Hot Springs, May 27, 1895.

Hugh Downman was born at Exeter in 1740, was educated at Exeter and Balliol College, Oxford, (B. A. 1763,) and ordained the same year in Exeter Cathedral. After being ordained, not finding his clerical prospects very bright, he went to Edinburgh to study medicine with Cullen, the Monros, and Joseph Black; he remained for six years, and then completed his studies in London with the Hunters (John and William), and William Hewson, (all of whom he mentions in the book), beginning the practice at Exeter in 1770. He had to give up the practice in 1778 on account of bad health; but resumed it again in 1790. During this retirement he published three tragedies, two volumes of poems, and was one of the translators of Voltaire's works. He continued in practice from 1790 to 1805, and died in 1807 at the age of sixty-seven. We have then, before us a man of liberal education, not uncommon during the period in which he lived, who had exhausted the learning of two of the liberal professions, began the practice of medicine at the age of thirty, yet practiced in all for twenty-three years; and who was besides, a most successful, amiable man and practitioner, and an author of some note, as is attested by Isaac D'Israeli, and evidenced by the success of his works. Living in the reign of George III., he was a cotemporary of Samuel Johnson, Goldsmith, Gray, Garrick, Sir Joshua Reynolds, and a host of others, all imbued with the same spirit of learning, and all moving in the same literary orbit, as is best attested by that greatest of biographers, Boswell. In those days, a learned physician knew more of poetry than of medicine—because there was less to be known of the latter than the former, and a mistake in the quantity of a Latin quotation was of far more importance than an error in a prescription. The daily meetings at the Mitre, the Turk's Head, or by whatsoever name the coffee-houses were called, were very conducive to the development of wit; and the discussions held at those places, not a little favorable to the accession and imparting of knowledge. During the times of war and turmoil for England, the period of our American Revolution, when great men in both countries were coming to the front, Downman practiced medicine and wrote poetry.

"Infancy" is written in six books, in iambic pentameter, blank verse. The author begins with the invocation before quoted, and proceeding with his verse, soon launches out against "the pernicious custom of giving children some drug soon after they are born," preferring colustrum, in the following words:

"Know the first efflux from the milky fount
Is nature's chymic mixture, which no power
Of Art presumptuous can supply; this flows
Gently detersive, purifying, bland;
This each impediment o'ercomes, and gives
The young, unfetter'd springs of life to play."

He next proceeds to show that the best food for children is mother's milk; and, curiously enough, uses one of the same arguments against those mothers "lost in pleasures, in the round of modish life and dissipation gay, misnamed polite," that is sometimes, still employed, as follows:

"She who refuses to her young one's life
Her swelling bosom, each returning year
Conceives, and each returning year sustains
The pangs of childbirth."

Then, after awhile, having shown that there are reasons why a mother cannot nurse, he adds:

"Let my lays
Direct thy choice for the momentous task,
Whom to retain, what parent to adopt.
For thy unconscious young one."

He claims that, not only the body, but perhaps even the soul, may depend upon the choice of a wet-nurse; and proceeds to point out what qualities are to be looked for in the choice of one. She should be from the country; she must heed the "laws of matron-like sobriety;" her fame must be "from all suspicion clear," and she must, in all respects, be a good mother, wife and good housewife. She must neither be too young, nor too old; for, if the latter,

"The flexile vessels, which convolved in maze
Wrapped within maze, secrete the purer streams,
Their office will more sparingly perform,
Or less nutritious particles supply."

He continues to draw a picture of poetic loveliness, of a perfect wet-nurse, which hardly conforms with the real conditions in this century. The advice is then given to permit the child to be taken to the wet-nurse in the country, even without its mother, for the city air is dangerous to children, being, as the author puts it,

"Th' unwholesome atmosphere, gravid with seeds
Of latent sickness, suffocation fell,
Angina, apthous sores, eruptions dire,
Pertussis fierce, and squalid atrophy."

From this, we may draw the conclusion that, at the time the book was written, the custom, still so common in France, of sending children into the country to be brought up, also existed in England. The wet-nurse, in order to fulfill her functions properly, must be kept upon her usual diet, and allowed her own habits. To the latter subject, in general, he devotes the remainder of the first book.

In book the second,

"What aliment the tender babe requires,
How best sustained, the muse proceeds to sing.

He holds, that as the lamb, sporting o'er "the grassy turf," and the patient ox, "who turns, sweltering, all day, the stubborn glebe," have thriven on milk, why should "the infant cease to thrive, supplied with this Nepenthe?" In regard to the times of feeding, he sensibly, leaves this to experience; but advises no food during the night.

The lioness leaves her young to go for her prey during the night, and the lion-cub grows up to "hereafter reign lord of the forest;" but if the baby cries, "unalarmed sustain a few short trials; bear unmoved the shock at first; indulged not, he will fret no more." The importance of giving rest to the digestive organs, and the necessity of much sleep to the infant, is insisted upon; and after two months, some other food besides the milk is permitted. Fortunately for Downman's patients, he does not know anything about Korownin or Zweifel; and the pancreatic ferments are a *terra incognita* to him; so he advises farinaceous foods He prefers,

"Bread, well fermented, unadulterate,
With deleterious alum; this with milk,
And with the limpid element decoct."

After nine months, comes the time of weaning—not suddenly, but gradually.

"And ere the stream maternal be refused,
His taste to different nutriments incline."

And now comes the choice of food during and after weaning. He warns against exclusive vegetable food, as producing "tottering rachitis," or "slow-consuming tabes," or "the tortuous worm," which "multiplies his noisome produce." The food must be mixed, "herb, root, seed, and animal," a "truth the anatomist plainly demonstrates." Firmer meats must not be used.

". . . till the rising teeth
Spring from their latent seeds, and deck the mouth,
In rows of clearest white,"

because the fibres will become impacted, and because the salivary glands will not emit "their needful liquid." It is better to give soup, combined with "the generous gifts of Ceres," and the "pearly grain from Carolina."

It seems that Pediatricians had their troubles in the matter of feeding in those days as well as now. It was easy to choose the food, but how difficult to have directions carried out!

"Wilt thou treat thy child by their opinion,
Whose advice thou wouldst not follow
In one act beside?"

he asks. How natural all this seems; and what an excellent way of putting the whole question. In the apotheosis, he glorifies woman, enjoining her to

> "Go, bless thy husband with a numerous race,"

i. e., after weaning the baby,—in a manner *almost* satisfactory to the defenders of women's rights.

The next book opens with an exordium to Cullen. worthy of one to Hippocrates. He continues the subject of feeding, prescribing the same food as above for twelve months more, and then

> "His strength increased, his more elastic limbs,
> By constant motion exercised; his teeth
> Given for utility, not show, demand
> Food more substantive."

The advice is given to consult the "child's unvitiated taste;" and on this subject he grows eloquent, even hinting that of gynecology "the skillful muse, if so inclined, could sing." But the first conclusion is to remove "each high seasoned dish;" "each sauce impregnate with the seeds of fire, each spice."

> "Nor less he shuns
> Destructive Bacchus; why, then, will his sire,
> By frequent repetitions, strive to o'ercome
> Nature's dislike."

Downman is not an abstainer; he uses alcohol at the proper time and medicinally; "but childhood needs no foreign aids to stimulate the brain." The child should have one meal of meat and vegetables; the meat should be of young animals, not of those "stall'd and cramm'd, by filthy sloth and gluttony," and prepared in the simplest manner; of these, with bread, the child can eat until "hunger be sufficed." He condemns,

> "All things which housewife art with care preserves,
> Acid, or salt, or saccharine; all cates
> Of unfermented flour composed, or those
> Of fulsome sweetness, and enriched with wine."

He again comes back to water as the drink of children, and claims that the Indians succumbed to "Circean charms," finally gave up their "paternal fields," and have gone on to extinction, the few remaining being corrupt;

European cups having taught them every European vice. All fruits should be allowed children, berries, grapes, melons, and pineapples ; exceptions, in that they must be used cautiously, are nuts, and such fruits as ripen after being picked, as the shaddock, pomegranate and orange. After the child has become four years of age, he must conform to the laws of social life, *i. e.*, stated hours for meals ; he must have the heavy meal in the middle of the day, described before ; and for breakfast and supper, "fresh-drawn broths, and milk in various forms, with rice or other farinaceous grain inspissated." The author now goes on to pay his tribute to the didactic muse, mentioning many devotees, Akenside, Armstrong, Beattie, after which, he begins the next book with an address to Mr. Codrington, evidently his own physician, who administered drugs to him in vain. It will be remembered that for some time, Downman was ill, and it seems, the didactic lyre was not touched during this period.

The subject of the next book is clothing, heat and cold. He gives us here his notions of the cause of the first inspiration, due to the rushing in of the air into the lungs through their own exertion :

> ". . . the circulating blood
> Alters its course, thro' channels unessayed,
> Impelled, whose first resistance haply claim
> Exertions of the laboring heart, quick, strong,
> If not convulsive, yet irregular."

The infant, when newly born, is "impassive" to cold. and he claims that among savages the baby might, "unclothed," "brave the freezing atmosphere," but he does not recommend this method of treatment to the "Daughter of Briton" for her child. The baby is to be dressed loosely and comfortably, without pins, and, above all, not to be swathed ; nor, afterward, to be laced. Speaking of the care to be given children as to cleanliness, and the slovenliness of maids, he gives the following for intertrigo :

> "Nor is theirs
> The babe, who, smarting from their sloth, with nerves
> Keenly alive, by the corrosive sting

> Of acrimony pierced, tormented shrieks,
> Or moans incessant."

We meet the popular view, that it is not good for a child to sleep with an old person, because the baby loses heat to "warm the shrivell'd dotard." The clothing must be changed with Sirius or Aquarius, exceptions being made for weak or sick children; and a cold bath being given. The book ends in descriptions of all kinds of waters that may be used medicinally.

The next book begins with addresses complimentary to Monro, the Hunters, Hewson and Black; and has for its subject that of exercise. The child is to be allowed to do as it pleases; no harm can come from premature walking, because a wrong posture will be corrected by uneasiness, "nor will his feebleness permit the force inducing harm, so strictly to his weight proportioned." Cradles must not be used, and the "untoward swing, the go-cart and the leader," should be "doomed to oblivion," or to "some museum's nitch devote." After having traced exercise and its effects, through the varied stages, he begins to inveigh against the teaching of children "by rote" of "sonorous trifles, useless, and to him incomprehensible;" but evidently, does not know the physiological reason for this good piece of advice. The book concludes with a supposed fragment from Hesiod on the origin of exercise.

In the last book we find the author disclaiming any attempt at description of disease, or recommendation of remedies. This, as he says, is unfit for the muse, and he leaves it "to some Medicaster, who, the quill dext'rously wielding, aims at vulgar praise;" a sentiment and a sentence that might even satisfy those of us who are most pronounced in our views on newspaper medicine. He contents himself rather with endeavoring to remove false opinions on the part of the mother, regarding disease and the seeking of advice, when "to invoke superior wisdom's aid." First: As to diagnosis; he shows that this is objective in children, and, to the adept, the signs are just as intelligible as they are in the adult, mentioning the cry, the position of the muscles, the breath, movements of the eyes, the face, the pulse, the skin, the condition during sleep and while awake, and other signs. He next warns against the use of remedies in the hands of the unskilled ; mentions the fact, that, as nowadays, children are suffered to have simpler remedies than adults, therefore require simple treatment, which might be construed as the prototype of the modern argument advanced in favor of homœopathy, for the treatment of children's diseases, but, he adds, he "cannot but decry the unsound opinion which, for all alike, one favorite mode of practice recommends." In etiology, it is best to quote the author, at least partially :

> " Acidity
> Some only blame ; and some, the sting severe
> Of acrimonious humors. These accuse
> The noisome worm, however hid from sight.
> Those, as exciting fever, reprobate
> Naught but the growing teeth. Repletion, some,
> While others dreadful fits survey within,
> Or e'en pretend to trace them in the smile
> Of downy sleep. Nor women solely err."

How strange that the fight, still going on on some of these lines, should have been already so clearly defined by Downman.

In derangements of the stomach and bowels, he would not deny the mother the privilege of giving the children some Indian root, or " some useful antimonial," or some magnesia, or, "joined with this, more strengthening rheum, from Siberian wilds, or Turkey's region brought." But further than this she ought not to go. He warns the mother not to entrust her child to ignorant midwives or nurses, otherwise she will have occasion for remorse. He next shows the value of inoculation, it being a veritable triumph of science ; praises Montague and decries Pope for daring to censure her, "with malicious spleen and meanly-coward soul." It might be of value to have the next lines published, for the benefit of the anti-vaccination societies ; for they show, what their members seem to forget, how universal was small-pox, and how impossible to escape it in the days when even inoculation was considered a boon.

Some contra-indications for inoculation are mentioned, *i. e.*, not before dentition, nor during the same; not during the winter, nor in the height of summer. Jenner is not mentioned; his book was not published until ten years later; but it seems strange, when we reflect that during the twenty years preceding it, Jenner had been experimenting with vaccination, at the time, being a friend of the Hunters, that Downman should thus appear to have had no inkling of the discovery of Jenner.

If we disregard the literary value of this book, there remains, for us, both an insight into the history of our subject, and also into the nature of the man who wrote it. The literary part does not appeal to us of the present day, any more than do the poems of Samuel Johnson; although in both will be found the evidences of astounding learning, of that especial kind only exceptionally found among the physicians of the present day. As far as the historical development of our subject is concerned, the author has, unfortunately, taken up more the hygiene of infancy and childhood; but, it must be admitted, that whether or not his views were those that were current in his day, they were, although incomplete, pretty sound in the main. I do not here offer any apology for the cursory manner in which I have dealt with the little book, my object being mainly to bring to your notice some of its salient points.

Let us compare, in some of these points, several of the most popular books on children's diseases of the period in which Downman lived, and this will give us the best idea of Downman's independence of thought, and, possibly, originality. The most widely read book of that period was by Nils Rosen von Rosenstein, first published in Swedish in 1771, translated into English, 1776, into German in 1786, (other editions 1787, 1794, and 1798;) into French in 1778, (second edition, 1793;) into Italian in 1780, (second edition. 1783.) This author is, for his time, quite sound in his ideas of artificial food; makes a distinction between boiled milk and raw milk, and even advises barley water as an admixture, or when the child is constipated, oatmeal water. But observe his directions for nursing the child: It must be nursed when hungry, and this can be determined by, (I translate from the German edition of 1774:)

I—If the chlld has not nursed for several hours;

II—If it directs its eyes upon the nurse, and follows her wherever she goes;

III—If pleasure beams from its eyes whenever the nurse uncovers her breasts;

IV—If the child sucks at the nurse's finger, which must first be cleaned, whenever she puts it into the baby's mouth.

Again, note his signs of teething and its dangers; among the former, swelling and redness of the tonsils, the eyes and cheeks; among the latter, fever, sleeplessness, convulsive movements of the face, general convulsions (called der Jammer by the German translator), finally somnolence and death.

In order to facilitate teething, he uses a wolf's tooth, or any other hard substance, rubbing the gums with honey, syrup of violets (Viola pedata), syrup of Althea, good olive oil or oil of sweet almonds, unsalted marrow, fresh butter, fresh brains of rabbits or calves. As a last resort, he has the gums lanced, but care must be taken not to leave the least thread of tissue over the teeth, as otherwise it will be for naught. His last admonition, however, is one worthy of mention: "That if a child becomes ill, having twenty teeth, we should not ascribe the cause to teething, as it does not get any more teeth before it is seven years old." He has a proper idea of the nature of colustrum, not so Schaeffer (the translator of Armstrong), who gives the following to every newly born child:

℞

Syr. de Cicor. c. Rheo.................. ℥ iss
Mann. laxat. Oxymell. Scill..........aa ℥ ss

to which he adds Vinum Antimon. Huxh., if they rattle very much, until they are thoroughly cleared out "both from above and below."

Again, compare Downman with Armstrong, who also wrote a very popular book (London, 1777 and 1783), and translated into German by Schaeffer, 1786 and 1792. Armstrong himself was rather judicious, but Schaeffer was more afraid of catching cold than we are of bacteria. He does not want children to be dried during the night, certainly not unless there is a fire in the room; although he permits the children to be bathed twice a week, in lukewarm water, to which some wine is added: after the baby is three months old, cold water can be used. The windows of the nursery must be open during the dry time, and the doors at night, The therapy consists in all cases of Moliérés,

> Seignare, vomitare et purgare
> (Blood-letting, antimony and rhubarb.)

We must furthermore, remember that John Hunter (1772) was the man who lanced the same gum of a tooth ten times, and ascribed most diseases of children to teething, first opposed therein by Armstrong, and that Downman was a most devoted friend and admirer of the Hunters, of whom he says, "dear to science, to your country dear, deserving public fame and private love." In view of these facts, it certainly speaks very highly for Downman's independence of thought and originality of observation not to have followed the teachings of this illustrious man.

In conclusion, we must certainly be willing to admit that Downman was very much in advance of his time. Original in thought, certainly original in expression, and fertile in experience.

SOME PHYSIOLOGICAL FACTORS OF THE NEUROSES OF CHILDHOOD.

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VIII.

Blood Changes (Continued).

AN IMPOVERISHED CONDITION OF THE BLOOD.

In previous chapters I have noted certain blood conditions which produce nervous symptoms by their direct irritant or poisonous action on the nervous centres ; and now I wish to inquire what nervous symptoms may be produced by an impoverished condition of the blood, producing either *innutrition* or *malnutrition* of nerve elements. It is most important in this study that one should always keep in mind that innutrition and malnutrition represent very different types of nutritive disturbance. By innutrition of nerve elements is meant a simple starvation of nerve elements, such as would result from a simple quantitative reduction in all the nutritive elements of the blood, which are necessary to the development and healthful action of nerve tissue.

By malnutrition of nerve elements is meant a bad nutrition or a qualitative change in the blood, such as a diminished amount of fat, of albumen, of calcium, or of some other important constituent of the blood.

Innutrition of Nerve Elements, such as may result from a simple quantitative reduction of all the nutritive elements of the blood rarely, if ever, exists as an unaided cause of disease, except possibly such an uncomplicated condition may be produced by actual complete starvation or by repeated hemorrhages. But, while a simple innutrition of nerve elements may very rarely exist as an uncomplicated factor of disease, yet nerve innutrition in some, more or less modified form, is a constant accompaniment of all the blood conditions, which poison, irritate, or mal-nourish nerve elements; and medical writers have always thought, that the innutrition of nerve elements was in great part responsible for the nervous symptoms which are associated with all these abnormal blood conditions. For these reasons, it is most important that one should inquire into the exact role played by a simple innutrition of nerve elements in the production of nervous symptoms. After a careful study of this question, and numerous consultations with physiologists, I decided that the best method of studying this question experimentally in animals, was by subjecting them to repeated bleedings or by starvation, or by both methods combined. Following out this idea, I starved and bled a number of rabbits into a condition of profound innutrition. In these experiments the rabbits were given all the water they would take, and as little food as possible consistent with life. These rabbits were kept for two or three weeks almost at the point of complete starvation, before they were finally starved to death. It was found that the innutrition of nerve elements, which must necessarily have resulted from this starvation, had very little influence in producing nervous symptoms. After two or three weeks of starvation, the spinal reflexes were not noticeably exaggerated, and the electric excitability of the muscles was actually diminished. It would seem, therefore, from these experiments that a simple innutrition of nerve centres, when not assisted by other factors of neurotic disease, has little influence in producing nervous symptoms; and, it is moreover, here worthy of note, that this conclusion drawn from physiologic experiments is in keeping with the physiologic law noted in chapter first of this series of papers; viz., "other conditions being the same, the amount of energy developed by a nerve cell, will depend directly on the amount of healthful chemical metabolism going on within the cell. The maximum amount of energy will be found stored up in the well nourished cell, and the minimum amount of energy in the starved cell." For the above reasons, I am led to believe that a simple innutrition of nerve centres leads to such a diminution of stored up energy in the cells of these centres, that any increase of irritability which may result from the simple innutrition of these cells, is of little moment in the production of reflex neuroses. The diminished amount of stored up energy in starved nerve cells, will offset the influence of their increased irritability in the production of nervous disorders. But whether or not this is the true explanation of the observed phenomena, the fact remains, that experimental innutrition of nerve centres does not increase the reflex phenomena presided over by these centres.

Clinical medicine also furnishes evidence that a simple innutrition of nerve elements is not an important factor of neurotic disease, since it is a fact not infrequently observed, that long and repeated hemorrhages may produce a profound innutrition without causing any pronounced nervous symptoms. It is also a notable fact, that the starvation experiments which have been made, for notoriety and pecuniary benefit, by a number of persons within recent years, did not produce any increase in their nervous irritability.

All of these facts are in evidence to prove the truth of the proposition that *innutrition of nerve elements is not an important factor of neurotic disease in children.*

The clinical importance of this physiologic proposition is great, and must not be neglected. If clinicians would keep this fact in mind, it would always suggest to them the importance of carefully inquiring into the exact blood conditions present in nervous disorders. It is "bad" blood, not "thin" blood, that is a most important factor in producing neurotic disease in children.

Malnutrition of Nerve Elements, such as may result from a diminished amount of fat, albumen, calcium, oxygen, or some other important constituent of the blood, very commonly exists as a factor of neurotic disease in children. This condition, which Christopher has described as a "partial starvation" of nerve elements results in making the nerve cells much more irritable, so that they discharge their force much more readily than stable, normally nourished cells would do. Such qualitatively starved cells are yet sufficiently well nourished to store up considerable nerve energy to be thus fitfully discharged.

While we are reasonably certain, that malnutrition, in the restricted sense here used, is an important cause of nervous disease in children, yet, we have very little accurate knowledge upon this subject. We have reason to believe, that a malnutrition of nerve elements is in part responsible for the nervous symptoms which result from the chronic blood intoxications referred to in previous chapters; but in these instances it is impossible to separate the symptoms produced by the malnutrition from those produced by the toxemia. Notwithstanding the very great difficulty of studying this subject from a clinical standpoint, yet its importance demands that we should make an attempt at conclusions from clinical observations, even though they may not have the force of deductions from clean physiologic experiments.

Chronic anæmia is a term used to express an inconstant and very complex blood condition, which is one of the most common causes of general malnutrition and nervous disease in infancy and childhood. The chronic anæmia of infancy and childhood is due to a great variety of causes, the most important of which are tuberculosis, rheumatism, malaria, syphilis, intestinal diseases, improper food and bad hygiene. The blood in chronic anæmia is weak in proteids and hemoglobin, and such a condition must necessarily produce an oxygen and proteid starvation of the nerve cells, and there can be little doubt but that this proteid and oxygen starvation of nervous tissue is an important factor in producing the nervous symptoms of chronic anæmia in childhood. But as previously stated, chronic anæmia is a very complex blood condition, which may comprehend not only a diminished amount of proteids and hemoglobin, but it may also mean a diminished quantity of fat, of inorganic salts, or of the poisonous and irritating products previously referred to; yet, these accessory conditions are not so constant as the diminution in proteids and hemoglobin, and there is therefore, good clinical grounds for the belief that a proteid and oxygen starvation will increase the irritability of nerve elements, and in that way act as important factors in producing the various neuroses of childhood. In this we have an explanation of the well-known clinical fact that iron, and a food rich in easily digested proteids, will, as a rule, relieve the nervous symptoms of chronic anæmia by raising the percentage of corpuscles and hemoglobin.

Fat starvation, as a form of malnutrition, can best be studied in rachitis. The work of Cheadle and others clearly demonstrates, that fat starvation is one of the important causes of rachitis, and the feeding of some easily digested fat is now accepted as a most important means in the cure of this disease. It must not be understood that the blood condition in rachitis is described by saying there is a diminution in the amount of fat, since there is always present more or less chronic anæmia, as described in the previous paragraph, and also possibly a diminished quantity of calcium and phosphorus; but by far the most important blood condition is the diminished quantity of fat; since this is a constant condition, and one that we know is etiologically related to rachitis, and especially to its nervous symptoms; the inference therefore is probable that fat starvation is a form of malnutrition, which may predispose to laryngysmus stridulus and other local and general convulsive neuroses. It must be remembered, that fat starvation is not the only factor in producing the malnutrition of rachitis, any more than oxygen and proteid starvation are the only causes of malnutrition in "chronic anæmia." Just the part that calcium starvation plays in the etiology of rachitis, is a question in sharp dispute, and one that cannot here be discussed.

Calcium starvation may be studied to some advantage, from the very careful experiments of W. H. Howell, who demonstrated that the normal irritability of nerve and muscle tissue is in great part dependent upon the proper supply of calcium to these tissues. If the heart be deprived of calcium salts, by feeding it with blood deprived of its calcium salts, it stops beating very soon, and this action is so rapid, that it could only result from nervous influence. The most plausable explanation of this fact is, that the nerve ganglia of the heart, in the absence of calcium, fail to discharge the nerve force which stimulates the heart muscle to contraction. If, on the other hand, the heart be fed with a calcium solution in distilled water, it will continue to beat for a long time. In this instance, the calcium keeps up the irritability of the cardiac ganglia, so that they continue to discharge nerve force into the cardiac muscle, and the heart's action continues. In this explanation, which I have taken the liberty to make from Howell's experiments, I have attributed to calcium an important influence over the discharge of nerve force from automatic centres; the presence of calcium in normal quantities causes these centres to discharge their nerve force into the cardiac muscle, as they normally do; and the absence of calcium inhibits the discharge of nerve force from these automatic centres, and as a result the heart stops.

If a certain amount of calcium is necessary to the normal irritability of nerve centres, and if the absence of calcium inhibits the discharge of force from nerve centres, then it is reasonable to infer that a diminished amount of calcium would have an influence on the irritability of nervous centres, which would find expression in clinical manifestations. That an insufficient quantity of calcium in the blood may produce nervous symptoms, is, I think, proven by Howell's experiments, although Howell himself does not thus interpret them. He says: "When a frog is irrigated with oxylate solutions (that is to say calcium free solutions) the muscles are affected quickly and in a peculiar manner" * * * "twitching movements of toes begin in a few minutes, and soon extend to muscles of the leg and trunk. In some cases, these movements were violent; strong convulsive contractions of muscles and limbs followed each other rapidly, and were often so violent as to throw the animal out of the position in which it was lying. The convulsions resembled those caused by strychnia, the violent tetanic contractions had the appearance of being caused by stimulation of the cord." This extremely excitable condition of the reflex nervous mechanism was followed after a time by the complete loss of irritability of this mechanism. These observations by Howell seem to me to show that between the stage of the normal irritability of this reflex mechanism, when the calcium salts are supplied to it in normal quantity, and the complete paralysis or loss of irritability of this mechanism, due to the more or less complete absence of calcium salts, which have gradually been washed away by the calcium free circulating fluid, there is a stage of extreme irritability, and reflex excitability of this reflex nervous aparatus, which corresponds to the period when this nervous mechanism is supplied with a diminished amount of calcium salts, that is to say, there is a partial calcium starvation of the nerve elements. This explanation of Howell's experiments is supported by his further experiments, although he does not so interpret them. In animals, in which the irritability of the reflex nervous apparatus had been destroyed by calcium starvation as in the above experiments, it was found, that if calcium solution was added to the circulating fluid of the muscle, the primary effect was to again produce a twitching movement of these muscles, "lasting for a short while," to be followed by a more or less distinct return of the muscle to its normal irritability; here again I have taken the liberty of drawing conclusions, which I believe to be correct, from the work of Howell and others, but to which I do not wish to commit Dr. Howell, as he made no such deductions from his experiments. The small amount of calcium, which first reached the muscle, resulted in a partial restoration of the nerve muscle irritability, and the same convulsive movements, which were above noted as being due to too little calcium in the circulating fluid, which supplies the muscle and its nerves, and these convulsive movements subsided when the nerve and muscle elements had received sufficient calcium to place them in a state of normal irritability. From these, and other experiments along the same line, I conclude that calcium starvation of nerve elements may be a factor in the production of the convulsive neuroses of childhood. The application of this conclusion to clinical medicine will, I believe, in the near future be recognized as something of real importance.

An International Congress on Childhood will be held in Florence in the spring of 1895. Among the questions to be discussed are the physical, moral, and mental elevation of children, children's hospitals, the care of deaf-mutes and blind children up to the time of their admission into an educational institution, care of poor and abandoned children, reformatories, and vagabondage in its relation to childhood.—*Times and Register.*

Milk Analysis.—Prof. Leeds reports the following results of analysis recently made of three samples of dairy milk of good quality:

	Per cent.	Per cent.	Per cent.
Water	86.01	86.35	86.03
Total Solids	13.99	13.65	13.97
Fat	4.80	4.83	4.80
Lactose	4.47	4.22	4.62
Albuminoids	3.88	3.71	3.78
Ash	0.75	0.74	0.77

Milk as Diet of the Sick.—Where milk is employed in the dietetic management of the sick, it is well to remember that good cows' milk is never more than faintly acid when received, often and properly neutral; and should never require more than one twentieth of its bulk of lime-water to neutralize it; while poor cows' milk often has a distinctly acid reaction, and easily undergoes changes. The bacteria are foreign to milk, determine its various fermentations, and are reduced to a minimum number in milk properly collected and handled. That the degree of heat at and below which the nutritive values of milk are not materially changed is 75° Centigrade (167° Fahrenheit). That all milk is altered in its constitution by sustained high temperatures. That the curd of casein is made lighter and more easily digestible by dilution.—*Coit.*

WHAT IS CROUP?*

BY S. HENRY DESSAU, M.D.,

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It is now a little more than a century ago that Home, of Edinburgh, introduced the term croup into medical literature. It was no doubt intended by him to denote a new disease of children, or at least, to make clearer one at that time not fully understood. The term croup since then however, has been corrupted to designate only the most marked and alarming feature of a group of diseases affecting the larynx in children. It can be readily understood how such a corruption should occur, first with the laity, and later with the medical profession. The danger of the disease, as originally described, was soon associated by anxious mothers with the quality of the cough, and this, without further investigation, was often accepted by medical men, until custom became almost a law in the matter. So much confusion appears to exist in the minds of many young physicians, and old ones also, even at this end of the nineteenth century, in clearly recognizing the different diseases of the larynx characterized by the unnatural, ringing, resonant, metallic tone of the cough, which originally suggested the term croup, that I have thought an effort to elucidate and define, in a concise manner, *what is croup*, would not be inappropriate.

The name is misleading, in so far as the appreciation of danger is concerned, not only to the laity, but to the profession as well; because the feature of the croupy cough does not convey an accurate idea of the condition producing it, so that such a high authority as Trousseau has said that "croup is not croup;" referring, as many will always do, to the quality of the cough as an indicator of the disease. The late Prof. Fordyce Barker has placed upon record the statement that in twenty-five years' practice of medicine, he did not lose but three cases of croup, and these were seen in consultation only. He attributed his phenomenal success to the treatment he employed, which was emesis, with turpeth mineral, *ab initio*, and later, the use of veratrum viride, to keep the pulse down to eighty per minute. In two of his cases, casts of membrane were vomited. It would seem, from such a statement, that even so clever a practitioner as Barker, must have lost sight of the true distinction of the different diseases in which the feature of croupy cough forms so prominent an element To make matters clear at the outset, the term croup is here used in its properly accepted sense, to mean a pathological stenosis or narrowing of the calibre of the larynx from the deposit and growth of an exudation or false membrane upon its mucous surface. A stenosis of the larynx may be due to other causes, such as an acute swelling of the mucous membrane covering the vocal cords or glottis, either from catarrhal congestion, the inhalation of steam, or mechanical injury. The condition of stenosis from these causes is, for the most part, uninfluenced by pathogenic changes, such as result in a formation of exudate, and therefore need not be considered as entitled to be called true croup.

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*Read before the Section on Pediatrics, New York Academy of Medicine, May 9, 1895.

The affections of the larynx that are most likely to be confounded by the young physician with croup are, *laryngismus stridulus*, or thymic asthma, as it is sometimes called, and *catarrhal laryngitis*, which, to make matters more confusing, (owing to a similarity of names,) has been, and is even yet, called by some writers, stridulous laryngitis.

Laryngismus stridulus is practically a manifestation of rickets, and should, under no circumstances, be confused with either catarrhal laryngitis, miscalled stridulous laryngitis, and certainly not with true croup, which is always either primary diphtheria, or pseudo-diphtheria of the larynx. It is the "holding-breath" spell of rickety infants, and is incidental to infancy only. After a more or less prolonged pause of respiration, during which the face becomes livid, and convulsive twitchings of the muscles of the face and extremities may occur, there is a loud, crowing *inspiration* of a rough, grating tone. These spells may be repeated frequently in a short space of time, or may occur at longer intervals throughout the day. They are not to be confused with the snorting breathing of new-born infants. The ready recognition of catarrhal laryngitis or *false croup* is not always so easy, though it is hoped that points here given may be of some aid. Catarrhal laryngitis is manifested in two forms, the *spasmodic* and the *simple*. The spasmodic form is not so difficult to distinguish. It comes on suddenly at night, waking the child out of its sleep, rarely occurs under one year of age, and there is usually a history of a disposition to former attacks, or enlarged tonsils, post-nasal catarrh and its sequent, adenoid growths of the pharyngeal vault. Its most prominent features are a loud, metallic, ringing quality of cough, with attacks of alarming dyspnœa. These symptoms usually subside to a marked extent through the following day, when only a slight hoarseness of voice will be noticed. The attacks of cough and dyspnœa may occur, to a less degree, for two more nights, when recovery is prompt. The attacks of dyspnœa do not last longer than ten or fifteen minutes; in their interval respiration is not difficult. In the simple form of catarrhal laryngitis the attack comes on more gradually, with hoarseness of cry or voice, and ringing tone of cough. It may begin during the day, but is decidedly more marked in the night. It may occur at all ages up to seven years. There is, at the onset, a marked rise of temperature, but the child shows no special signs of discomfort that could be referred to the larynx. There may be attacks of difficult breathing, but they occur either towards or during the night, never during the day. An exception to this was recently observed in a child one year of age, during an attack of influenza, where the diagnosis for a few hours was in doubt. The hoarseness of voice and ringing cough may persist in the day time, even accompanied with noisy or hissing breathing; but the difficulty in respiration will always be noticed on *inspiration*, expiration being quiet and easy. The voice is never muffled or completely lost, except perhaps during an attack of dyspnœa. After the first few days, all of the symptoms tend to improve. The pharynx, in the act of gagging, becomes filled with muco-purulent secretion; the cough becomes softer, and a bronchitis may follow, from extension of the catarrhal process into the bronchi. The hoarseness and cough may last for a week or more, but, except in very severe cases or those complicated with diphtheria, there is *no progressive development of the disease.*

It cannot be denied that simple catarrhal laryngitis is sometimes fatal, but the rarity of such ending may be judged, when Trousseau, in an immense practice, extending over many years, saw only three deaths.

The cases of simple catarrhal laryngitis that are most perplexing in the matter of diagnosis, are those upon which have been engrafted the germs either of diphtheria or pseudo-diphtheria, during the progress of the attack. A history of exposure to contagion will be of great assistance in such cases, besides the observation that the difficulty of respiration grows steadily worse after the case had commenced as one of simple catarrhal laryngitis.

Two cases of laryngitis, one accompanied by membranous exudation, from entrance of foreign bodies into the larynx, are reported by Dr. Wharton in "Keating's Encyclopædia of Diseases of Children." These cases presented all the symptoms of true croup, and are mentioned here as rare cases.

Ashby and Wright mention the relief given from inhalation of warm, moist vapor, from either a croup kettle or steam tent, as an important aid in the diagnosis of catarrhal laryngitis from membranous croup in the early stage of the disease. The relief given in catarrhal laryngitis is marked and permanent, the contrary being the rule in diphtheria and pseudo-diphtheria of the larynx.

Steiner regarded sneezing and coryza as signs favorable to the indication of catarrhal laryngitis—true croup, or what is commonly called membranous croup, is either primary diphtheria or pseudo-diphtheria of the larynx. When the exudation is seen in the pharynx or nose, diagnosis is clear, but where no such evidence is presented, bacteriological examination will show that it is one or the other of these affections, notwithstanding the statement of Dr. Dickey in the *Medical Age* for January, '94, to the contrary. A swab culture taken from a probang, wrapped with a little clean cotton wool (slightly scorched by passing hurriedly over an alcohol flame,) which has been dexterously inserted into the larynx of the patient, will show either the diphtheria bacillus, or the streptococcus, with the pseudo-diphtheria bacillus of pseudo-diphtheria, in twenty-four hours. The vast importance of an early diagnosis in these cases will be at once recognized, when the knowledge it gives, not only points out the right course for treatment, but aids in guarding against the further spread of contagion.

According to a recent report of the bacteriological department of the Board of Health of this city, out of 286 cases reported of so-called membranous croup, during a period of ten months, eighty per cent. proved to be true diphtheria, fourteen per cent. pseudo-diphtheria, and six per cent. were doubtful. One hundred and ninety-four of these were of primary laryngeal origin, no exudation being visible in the nose or pharynx. The bacteriological department of the Board of Health of New York now advise *membranous croup* to be included in the list of contagious diseases.

The suggestions offered for making an early diagnosis in true croup, are well enough for city practice, but in the country and small towns no such opportunities exist for scientific investigation, and reliance must, as formerly, be placed upon a correct interpretation of clinical phenomena.

The clinical picture of both forms of catarrhal laryngitis being well impressed upon the mind, the contrast picture of true membranous croup may be brought out in bolder relief. Let it first be borne in mind, that the only difference between diphtheria and pseudo-diphtheria, concerning its location in the larynx, is, that one shows upon bacteriological examination, the Klebs-Loeffler bacillus, and is more fatal, systemically, than the other; which shows the pseudo-diphtheria bacillus with the streptococcus in mild cases, and both the staphylococcus and streptococcus in severe cases. Both forms of exudation are capable of producing a fatal stenosis of the larynx, and are contagious.

Membranous croup, true croup, is most insidious in its onset. If other cases of diphtheria or pseudo-diphtheria have been known to occur in the same family or neighborhood, the diagnosis will be greatly aided. The patient may not show any marked signs of illness in the beginning. There is little or no rise of temperature, perhaps a slight loss of spirits or appetite, but the patient will have a peculiar expression of apprehension of some impending danger. Later, there is a sense of marked discomfort referred to the larynx. The voice is at first hoarse or husky. This gradually increases in development until it is either suppressed or completely lost, not only during the attacks of dyspnœa, which soon follow, but in the intervals of the attacks as well. The cough, which is at first ringing and metallic in tone, soon becomes smothered and less frequent, until it is unnoticed. The attacks of dyspnœa begin at long intervals, which gradually grow shorter, irrespective of day or night, until *difficult respiration, which is the marked distinguishing feature of true croup*, becomes continuous. This is accompanied with a loud, harsh and hissing sound, heard, even in the early stage, both on inspiration and expiration. There is depression of the substernal and suprasternal and supra-clavicular spaces on inspiration, in the advanced stage. In a word, *all* of the signs of difficulty in breathing are progressive in character, until relief is given to the stenosis either by a spontaneous expulsion of the membrane during a fit of vomiting or coughing, or by surgical interference. After the second day, in true croup, albumen will most likely be found in the urine. The lymphatic glands of the submaxillary region are often enlarged in true croup; but almost never in catarrhal laryngitis.

To repeat: Catarrhal laryngitis or false croup begins suddenly, either with an attack of dyspnœa and croupy cough, or croupy cough alone. Membranous croup, which is either primary laryngeal diphtheria or pseudo-diphtheria, is most insidious and slow in its onset. False croup is always worse at night and better in the day-time; membranous croup, while it is worse at night, persists in all its unfavorable features through the day-time as well. The loud, ringing cough in false croup does not change its quality, and is more noticeable than the hoarse or smothered voice; in membranous croup the ringing cough is soon lost, becoming smothered, and is far less noticeable than the hoarse, husky voice, which finally becomes almost suppressed. In the interval of the attacks of dyspnœa in false croup, respiration is difficult, or harsh only on inspiration; in membranous croup it is so both on inspiration and expiration. In false croup the attacks of dyspnœa occur only at long intervals; that is, either at night, or, if in the day towards night; in membranous croup the intervals between the attacks grow steadily shorter, until difficult, or harsh, labored breathing is continuous. No reference is made to laryngoscopical examination, as it is at best most difficult for the general practitioner to accomplish, and is annoying to the patient. Moreover, the diagnosis can be made without it.

Other diseases, such as measles and scarlatina, are likely to be complicated with croup. Whenever such a complication occurs, it may safely be regarded as diphtheria or pseudo-diphtheria of the larynx.

Nothing is intended to be offered as to details of treatment, but it must be at once apparent to all, how important a matter the differential diagnosis of the various laryngeal disorders, attended with croupy cough or voice, in children, is, as bearing upon an honest and correct treatment. While a simple emetic or steam inhalation, with the internal administration of a diaphoretic, will suffice in false croup; or cold sponging several times daily, together with the internal use of cod liver oil and phosphorus, will do in laryngismus stridulus; any such waste of valuable time would be criminal in the management of true croup. Here we have to treat the effect of the disease upon the general system, as well as the local condition; but, while much improvement in our past methods may be possibly obtained by the newly introduced serum-therapy, the resort to calomel sublimations and intubations will continue to be necessary, in order to tide the patient over the dangers of suffocation. Thorough disinfection in every direction should always be carefully borne in mind in the management of true croup.

47 WEST FIFTY-SIXTH STREET.

Incubation Period in Infectious Diseases—According to the statistics gathered by the Clinical Society of London, the incubation periods in infectious diseases are as follows:

	Normal.	Maximum.	Minimum.
Variola	12 days.	14 days.	8 days.
Varicella	14 "	19 "	13 "
Measles	10 "	14 "	4 "
Rubella	18 "	21 "	8 "
Scarlatina	2 "	7 "	1 "
Influenza	8 "	5 "	1 "
Diphtheria	2 "	7 "	2 "
Typhoid Fever	12 "	23 "	5 "
Mumps	19 "	25 "	12 "

Retro-Pharyngeal Swellings—It should be borne in mind that every retro-pharyngeal swelling in a child is not necessarily an abscess. Lymphadenitis can occur in this situation as well as in the neck. Dr. Casselberry (Chicago) narrates a case where an infant of four months was threatened with asphyxia, from a hard tumor projecting from the posterior pharyngeal wall in the middle line. Three punctures failed to evacuate pus, and tracheotomy was required. The tumor underwent gradual resolution without suppuration.—*The Practitioner.*

THE TREATMENT OF CROUP BY CALOMEL SUBLIMATION.*

BY J. HENRY FRUITNIGHT, A.M., M.D.

Fellow of the American Pediatric Society and of the Pediatric Section of the New York Academy of Medicine.

The treatment of laryngeal stenosis or obstruction in cases of croup, by the sublimation of calomel which was suggested some years ago by Dr. Corbin, of Brooklyn, and is, hence, sometimes designated as the Brooklyn treatment, and which was permitted to lapse into disuse until Dr. Dillon Brown, of this city, again brought it into prominence, has in my hands yielded markedly successful results. What are the indications for the employment of calomel sublimation? When in the course of a case of croup, whether it be looked upon as simple, or specifically diphtheritic, the following symptoms appear, this method of treatment should be resorted to. As laryngeal stenosis increases, it will be observed that there is a recession of the supra-sternal notch, a retraction of the infra-thoracic walls, stridulous breathing, hoarseness of the voice, or aphonia at times, and lividity of the surface resulting from the deficient oxygenation of the blood. The presence of all, or a major part of these symptoms, should prompt us to employ this treatment.

The question has been asked, what is the *rationale* of this method of treatment? In reply, it may be said, that the remedy certainly does not act mechanically, that the drug may to some extent have a germicidal action, and that it is plausible at least, to assume that the heated vapor may have a local effect, similar to that produced by the vapor of slaking lime, which is sometimes used in the treatment of this condition. A better explanation than this, I am free to confess, I cannot offer, and I must acknowledge that this method of treatment is empirical and not deductive. Nevertheless, favorable results are obtained in cases of this nature by this method of treatment, and as that is the object to be obtained in the treatment of disease, we need not suffer any qualms of conscience because that treatment happens to be mainly empirical.

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* Read before the Section on Pediatrics, New York Academy of Medicine, June 9, 1895.

The medicine may be administered in doses ranging from five to twenty grains, repeated at intervals, varying from one-half to two or three hours, according to the urgency of the symptoms. In the average case, the proper dose is fifteen grains, repeated hourly. I have been accustomed to keep the patient in the vapor-saturated atmosphere for a period varying from ten minutes to half an hour, always graduating the period in accordance with the gravity of the symptoms. The treatment is continued from one or two days to ten or twelve days, as indicated by the persistence of the laryngeal obstruction. In an extensive experience with cases of this description, which embraces more than a hundred patients subjected to this method of treatment, I have yet to meet the first case in which deleterious results have attended or followed it. In one case alone, did ptyalism appear, and then only after the child had been subjected to the vapor for a prolonged period, and just when it was about to be discontinued. The ptyalism was but slight, and very soon abated after stopping the treatment. The evil consequences which we must guard against, are salivation, diarrhœa, and especially depression and prostration accompanied by anæmia. Knowing this, we can by careful attention and alert watchfulness prevent these untoward manifestations. The danger of prostration can be reduced by the administration of stimulants and nutrients during the progress of the treatment. It has been claimed, that the kidneys become involved, and that albuminuria supervenes. I have had no cases presenting such complication.

In this connection, it will not be amiss to allude to three women who were pregnant, and who despite my protestations, would persist in getting under the tent with the child and inhaling the vapor of the subliming calomel.

In each instance an abortion ensued. A woman who is pregnant should be restrained from exposing herself to the fumes of the drug, and the danger which she runs in so doing should be explained to her.

Should calomel sublimation be practiced in cases which have been subjected to the operation of intubation? I answer most emphatically, yes. Unhappily, many physicians seem to regard the operation of intubation as a curative measure. They do not stop to think, that it is merely a palliative remedy, that it is the introduction of a rigid, non-collapsible artificial air passage, for the purpose of granting the patient breathing capacity, and thus to enable him to outlive the disease. They seem to forget, that the disease process is still active, and in operation. As a consequence, all treatment is abandoned, and the patient succumbs, bringing discredit upon the operation of intubation, because, forsooth, it did not cure the patient. In cases of intubation, calomel sublimation should be continued until the disappearance of the symptoms of laryngeal stenosis indicate to the physician that the treatment is no longer required.

It is not my desire to weary you with detailed histories or cases; I will merely sketch, in briefest outline, a few, which stand forth prominently as exponents of the successes obtained with this treatment:

CASE I—L. Z., aged 3 years, was seen at 8 A. M. with all the symptoms already enumerated. I gave an unfavorable prognosis, ordered calomel sublimation (fifteen grains every half hour), the patient to remain ten minutes in the vapor-charged atmosphere, and promised to return in three or four hours ready to perform intubation. The patient was again seen at 2 P. M. A marked change had taken place, due to amelioration of all the symptoms. Indications for intubation were no longer present. The treatment was continued for six days, gradually prolonging the interval between the fumigations, and in nine days the patient was discharged well.

CASE II—F. P., aged 2½ years, was seen by me at 8 P. M., with violent symptoms of laryngeal dyspnœa and stenosis. I ordered calomel sublimations, as in the case just narrated, and returned at 1 A. M., prepared to do intubation. There was slight improvement, and I continued the treatment, and very slowly the patient improved, the sublimation having been used for ten days. During the first three days I was prepared at every visit to perform intubation.

CASE III—K. O. was seen early in the morning. Calomel sublimations (fifteen grains) were ordered for ten minutes every half hour. The patient did not improve, and in the evening it was necessary to intubate. The calomel sublimation, however, was continued. The tube was removed on the seventh day, and the fumigation was continued for thirty-six hours longer, in doses of twenty grains, at first repeated every half hour, then gradually lengthening the interval to three hours. This is the case which had slight ptyalism, to which reference was made in an earlier part of this paper.

These are types of the cases in which the method has been employed with such good results. Of course, not all recovered with the calomel sublimation; some advanced so that intubation was required. And some of those in whom both calomel sublimation and intubation were practiced died. Yet the fact remains, that more have been rescued from death by croup since the introduction of the treatment by calomel sublimation than before.

What is the method of application of the remedy? The chief principle is that the vapor must not be dissipated throughout a large extent of atmosphere. The patient should be placed in an enclosure, with an apparatus adapted to the sublimation of the calomel. Such an enclosure can be constructed of a sheet, placed about the patient to resemble a tent. Apparatus for the sublimation of calomel can now be obtained at the apothecary and instrument shops. If such a one cannot be obtained, the ingenuity of any intelligent physician will suffice to devise some arrangement, always bearing in mind that both patient and vapor must be confined in a restricted atmospheric area.

The brilliant results obtained in the application of this remedy in cases of croup, may seem nigh incredible to those unfamiliar with its use, but those who are familiar with the success attending this method of treatment, can never be induced to discard so potent and efficacious a therapeutic measure.

161 WEST 57TH STREET.

The Mineral Matter of Human Milk—Dr. Rotch, in the *Medical and Surgical Reporter*, describes the results of the analysis of a large quantity of human milk collected by a number of assistants. The examinations were made by Drs. Harrington and Kinnicutt, who found the constituents as follows:

Unconsumed carbon	0.71	Magnesium oxide	0.96
Calcium phosphate	23.43	Iron oxide Alumina	0.40
Calcium silicate	1.35		
Calcium oxide	2.54		

The analysis of the potassium and sodium salts was unsatisfactory. These results are somewhat different from those commonly given. Chemical methods have so much improved, that they are undoubtedly more nearly correct than the results obtained by the older experiments. The chief differences between this new analysis and all previous ones are as follows:

1. The phosphoric acid is less than half as much as previously reported.
2. The magnesia is also less than half as much.
3. Silica and alumina are present; they have not been returned in any previous analysis.

Assuming the truth of the statement, that the constituents of the mineral elements of human milk are subject to great fluctuation according to individuality and other causes inherent to the human race, it is right to presume that the mineral matter examined by Kinnicutt and Harrington, being the product of a large number of women, is a fair average specimen.

The British Orthopædic Society—An association of orthopædic surgeons was formed in London in November. There is to be no permanent president, but a Chairman is to be elected to preside each meeting. E. Luke Freer, of Birmingham, and A. H. Tubby, of London, were elected Secretaries, and Mr. Kettley, Treasurer.

Clinical Memoranda.

CASE OF EXTENSIVE HEMORRHAGES IN A NEWLY BORN INFANT, WITH RECOVERY.

BY L. EMMETT HOLT, M.D.,

Attending Physician to the Babies' and to the Nursery and Child's Hospital.

M. L., a female infant, was born in the Nursery and Child's Hospital, March 6, 1895, the birth weight being 9 pounds 6 ounces. The labor was natural, primary respirations good ; nothing abnormal was noticed until the evening of the second day, when a slight ecchymosis was seen on the inner side of the left arm, and a dusty patch in the præcordial region. On the morning of the third day, these areas of extravasation had increased very much in size, but no new ones were noticed. On the fourth day, there was a small ecchymosis about the right elbow, and a large one, covering the lower half of the right chest in front ; two or three small ones over the occiput, varying in size from one to two inches in diameter. The stools were quite black, but small, and showed no trace of fresh blood. On the evening of this day, oozing from the umbilical cord took place, temporarily checked by compresses. The general condition was now at its worst. The skin and the mucous membrane were very pale, and there was moderate restlessness, but the infant was nursing well, and seemed fairly strong.

The hemorrhages were at their height on the morning of the fifth day. At this time the whole left arm was black and blue. About a dozen areas of ecchymosis of variable size, were about the right arm and elbow, and several small ones over the knuckles of the right hand. There was a large area of ecchymosis over the inner part of the left ankle. The most extensive, however, were the hemorrhages upon the chest. The lower half of the left chest, in front, was almost black over an area as large as a man's hand. On the right chest, in front, was a similar but smaller area. The hemorrhages upon the occiput had not increased from the previous day, but there was one noticed to-day in the upper eyelid, of the left side. The cord had continued to ooze slightly at intervals during the night, and, in addition to free hemorrhage from the stump, bleeding had taken place into the cord, between the body and the point of ligature. The cord stood out like a round black ball, one and a half inches in diameter, looking like a small apple with a stem. The general condition was a little improved at this date. The movements still contained small black masses, but no positive evidence of blood ; there had been no bleeding from the mouth, eyes, kidneys, or genitals.

From this time forward, there was steady improvement, and in three days all the general symptoms had subsided. The cord came off on the fourteenth day, without any hemorrhage, and at the end of two weeks, the only trace of bleeding was the slight discoloration of the skin at the point of most extensive hemorrhage.

On the morning of the third day, when active hemorrhage began, the temperature touched 102° ; with this exception, it did not reach 100° F. during the attack.

The birth weight was regained on the fourteenth day, and in the third week the child gained half a pound.

Remarks—There have been few subjects in medicine regarding which there have been greater speculation, than the etiology of hemorrhages in the newly born. Their causes have been variously ascribed to sepsis, syphilis, mechanical conditions, changes in the blood pressure, changes in the heart and in the lungs. About one point, there seems to be little doubt, viz., that these hemorrhages have no relation whatever to hemophilia. The latter rarely shows itself in infancy, and almost never before the first year. Cases like the one here reported, illustrate one thing very plainly, viz., that the exciting cause, whatever it is, is a transient one. and that given a child who is generally vigorous, and who is placed under the best conditions of nutrition, the chances of recovery are good, provided the loss of blood is not sufficient to endanger life during the first few days. In the last year, two other cases of recovery from hemorrhages in the newly born, have occurred in the same institution, in one of which the hemorrhages were very extensive. For my own part, not one of the etiological factors mentioned, satisfactorily explains the clinical conditions seen, and it seems more than probable, that a large factor, perhaps the most important one, is the change which takes place in the blood during these early days of life. There are, of course, small hemorrhages which accompany sepsis, syphilis, Winckel's disease, and some of the other conditions mentioned, but these explained only a small proportion of those met with.

A striking feature of the case reported, was the sudden cessation of the hemorrhage, and the coincident rapid improvement in nutrition immediately after. At the end of two days, excepting for the slight discoloration of the skin, the child was as well as if it had never had any bleeding.

Treatment seems to have but little influence upon these cases. The most important thing is attention to the nutrition. If the child is upon a good breast milk, the prospects of recovery are good, because of the fact above stated, that the disease seems to be a self-limited one, certainly in a considerable proportion of the cases met with.

Dispensaries for the Children of the Poor—Professor Ferreri, in 1891, published a little work in which he strongly advocated the establishment of dispensaries for sick children in Rome, to be supported by the voluntary contributions of the wealthier classes, without the intervention of State aid or State control. His idea was so warmly taken up, that a dispensary has been opened on the Esquiline which is entirely supported by voluntary contributions, is doing good work, and at the same time is economically managed. During the year 1894 the number of children treated at the dispensary was 1,854, and the total expenditure, including medicines, nourishment, and orthopedic apparatus for the little ones, as well as management, was 4,700 francs, a little more than 2$^1/_2$ francs for each child. The medical staff give their services gratuitously. It is hoped that similar institutions will soon be established in other poor districts of Rome.—Letter to *Brit. Med. Journ.*, 1895, i., 619.

A CASE OF GONORRHŒA OF THE RECTUM WITH URO-GENITAL BLENNORRHŒA IN AN INFANT.

From the Service of Dr. Henry Koplik, Good Samaritan Dispensary, New York.

BY EMILY LEWI, M.D.

The rarity of the following case is attested by the fact that there is no similar authentic case reported in modern pediatric literature. Rectal gonorrhœa in the infant, resulting from what appears at least in the following case accidental infection, is certainly unique.

An infant, six years old, has no family history which includes a gonorrhœal infection of any of its members. The infant was in good health, until October, 1894, when it contracted a bronchitis. In February it was treated at the service of Dr. Koplik for broncho-pneumonia, which eventually resulted in the development of an empyema on the right side. It was sent for operation to an institution, and was discharged cured of the empyema. On reaching home the mother noticed that the infant suffered from a discharge from the vulva, and the anus, and brought her to the dispensary for further treatment.

Status praesens, March 22, 1895: Anaemic infant, well-nourished otherwise; eyes and mouth normal, chest shows very slight deformity at side of the exsection of the ribs for empyema. Examination of chest gives dullness on the side which had been affected, due to thickened pleura, with slight bronchitis in both lungs. Heart normal; abdomen somewhat large; signs of rachitis; a few inguinal lymph nodes enlarged. There is a profuse, thick greenish discharge from the vulva. This discharge can be seen to exude from the vagina also. Complete relaxation of the sphincter ani. Thick greenish pus, tinged with blood, exudes from the anal opening, and when wiped away the mucous membrane pouted considerably. There were small erosions, evidently ulcerations, on the rectal wall just within the situation of the anal ring. A Skene's urethral speculum was introduced into the rectum, and for several centimetres above the anal opening the mucous membrane was much swollen, angry in look, and spongy, and bled very easily. Pus, thick and greenish in hue, came from the parts above, indicating involvement of the gut high up. There was history of rectal tenesmus with four or five passages daily. These movements were accompanied not only by a purulent discharge, but the pus seemed to flow from the rectum in the intervals, so great was the anal relaxation. The urethral opening was swollen, angry looking, and discharged pus as stated above. The parts about the vulva were much inflamed, and thick greenish pus flowed from the vagina.

Bacterioscopic Examination of the pus was made by Dr. Koplik from the vagina and rectum. In order to avoid error, the pus from the rectum was collected by closing off the parts about the vagina, having first carefully cleansed the external genitalia. The vulva was then covered, and pus was collected from the interior of the rectum by means of speculum. The vaginal pus was collected with similar precautions, the parts having first been cleansed, the rectum was covered and a drop of pus was pressed from the vagina. The pus from the vagina and rectum showed the presence of the gonococcus.

The interest in the above case centres in the infection of the rectum; it is impossible, of course, to say which infection, rectal or vaginal, was primary. It is possible, however, that the vaginal infection came first, and carelessness on the part of the nurse in either cleaning the infant, or perhaps introducing an enema syringe, resulted in the entrance of the gonococcus into the rectum. The columnar epithelium of the rectum formed a very favorable nidus for the bacterial propagation.

In addition, the points of interest are, the great relaxation of the sphincter ani, the intense engorgement of the rectal mucous membrane, and the small losses of substance resulting in erosions. The infant at no time during subsequent treatment showed signs of peri-rectal inflammation.

Treatment consisted in the application of a ten per cent. solution of nitrate of silver every second day to the vagina, high up, by means of a Skene's urethral wire speculum. The rectum was also painted high up and low down with the same solution. Solutions of tannin were injected twice daily into the rectum, fully eight ounces being used at a sitting. The vaginal parts were syringed carefully at the same time. Three grains of bismuth were administered every two hours internally, for the local effect high up. The infant has steadily improved; the anal ring has gradually regained tonus. There is still a vaginal and rectal discharge, but in very much diminished quantity.

More Play-grounds for Children—The Board of Education of Philadelphia contemplates the opening of school-yards after school-hours, so that children may use them for play-grounds. There is no reason why the brick pavements in such yards should not be removed, in order to prevent broken limbs and other accidents which are liable to occur when children are obliged to play in such paved yards.

The movement for breathing-spaces, city parks, and children's play-grounds should receive all encouragement. The majority of children must remain in the city during summer, and the trolleyed streets and filthy courts and alleys are not fit for children to play in.—*Medical News*.

Advisability of Vaccination During the Existence of Skin Eruption—Dr. J. Abbott Cantrell, Professor of Diseases of the Skin in the Philadelphia Polyclinic, believes that the presence of an eruption of the skin does not contraindicate vaccination. The question has frequently arisen during the past few months, owing to the increased prevalence of small-pox, and the large number of patients which have been vaccinated in New York and Philadelphia. While the author admits that vaccination during the progress of a skin disease may add to its severity, and cause much greater suffering on the part of the patient, he does not believe that the results are sufficiently serious to prevent vaccination when it is indicated. He does not hesitate to vaccinate even in the course of psoriasis.

AN UNUSUAL CASE OF SUPPURATING BRONCHIAL GLANDS.

BY H. B. WHITNEY, M.D.,

Professor of Diseases of Children and Physical Diagnosis, Colorado State University.

I was first called to attend Oliver H., the infant son of our honored President, on February 2, 1894. He was then about seventeen months old, and was still whooping somewhat from a pertussis contracted two months before. For a day or two past he had had high fever with rapid respiration and increased cough. He was a well-nourished child, though he had dropped considerably from his weight of thirty pounds at the onset of the whooping cough. Physical examination disclosed numerous moist rales at both bases behind, with slight dullness on the left.

This attack of broncho-pneumonia was severe but of comparatively short duration, and the alarming symptoms soon disappeared. It left the child, however, rather pallid, and the cough persisted, with still some tendency to whoop. On March 9th, came an attack of measles. This was uncomplicated by any recrudescence of the bronchial trouble, but it was followed by a number of rather serious conditions. The child's weight had now diminished to twenty pounds. He was, however, still plump, and most of the time during the following months engaged in the usual active pursuits of an individual of his age. Soon after the measles, the left ear began to discharge; a little later it was also noticed, that the glands on both sides of the neck had begun to enlarge, and this rapidly increased until on each side there was a bunch as large as an English walnut, and somewhat smaller enlargements extending down to the clavicles. With the exception of a diarrhœa which lasted some three weeks, and an almost daily afternoon rise of temperature to 100° F. or over, there was no change in the condition up to June, although in general condition and weight there was if anything slight improvement. In the early part of June, owing to an increase in the cough, which had been constantly present, and also of the fever, a careful examination of the chest was again made. This revealed a surprising and unusual condition. There was, namely, an area of flatness of the left upper front, bounded above by the clavicle, below by the fourth rib, and to the right approximately by the median line. Toward the left, this area did not extend quite to the limit of the thorax; there was on the contrary, a narrow zone of fairly good resonance outside of the flat area. Over this area, there was marked bronchial respiration and increased vocal fremitus. There were no rales; nor was there at any subsequent examination anything which could possibly be interpreted as a rale. The heart was in normal position and of normal size. The lungs were otherwise negative, with the exception of slight dullness above the left clavicle. It is especially to be noted that the upper portion of the left back presented no noticeable dullness, nor could any be detected in the interscapular region.

A diagnosis was made of enlarged bronchial glands. This was thought probable for the following reasons: There was marked enlargement of the cervical lymphatics; there had been no acute development of any pneumonic condition; nor were there any rales such as would certainly accompany the presence of a tubercular consolidation; moreover, the resonance above the clavicle and that along the outer left border of the flat area, as well as the absence of posterior signs, were not in accordance with any hypothesis of a consolidated upper lobe.

On June 20th, furthermore, an event occurred which lent considerable weight to the diagnosis of enlarged mediastinal glands. A high degree of fever suddenly developed, with considerable dyspnœa, so that suspicion was aroused of a fresh onset of pneumonia. There were, however, no fresh physical signs, and in about forty-eight hours these alarming symptoms suddenly gave place to a complete euphoria. This change followed the evacuation through the mouth of a considerable quantity of muco-purulent material, partly by vomiting and partly by cough, an occurrence which was the more noticeable because expectoration had hitherto been very slight. At the same time a very marked change took place in the dull area described. Previous to the fall of temperature and purulent evacuation, this area had been almost flat; following these events it became markedly tympanitic, and the bronchial character of the respiration became much less pronounced. Rales were entirely lacking.

From this time on resonance over the dull area varied almost from day to day. At one time it would be quite dull, at another tympanitic. Since it now seemed pretty clear that the condition was due either to suppurating glands, or an encapsulated empyema, a consultation with Dr. S. A. Fisk was held with reference to the advisability of exploratory puncture. This was determined upon, and on June 28th, a hypodermic needle was inserted at three different points over the dull area. The result was negative.

Meanwhile, and from now on, the child slowly improved, gained steadily in weight, and the cervical glands slowly diminished in size. In July and August there was a considerable diarrhœa of three to four weeks duration which did not, however, interefere with the child's progress. In November there was a mild attack of herpes zoster. On December 23d, the child was taken with scarlet fever, which ran a comparatively mild course, and was uncomplicated except by a recrudescence of otitis media in both ears. At the present time this has ceased, the cervical glands are very small, the weight is twenty-nine pounds, and the general appearance is one of health and vigor. The condition of the lungs is as follows: Over the left upper front there is still a small area of moderate dullness, along the left sternal border from the clavicle to the third rib. This area is narrow, and the outer two-thirds of the chest has quite regained its normal resonance. There are no rales, and respiration over the dull area is a trifle bronchial, elsewhere normal.

This case is interesting, in the first place, as illustrating the comparatively slight effect which a succession of severe pathological conditions may have upon the constitution of a child; and, in the second place, because of a rather unusual sequel of whooping cough. Everything would seem to point to an enlargement and suppuration of the bronchial glands, causing at first marked compression of the contiguous lung at the left front, and subsequently discharging into the œsophagus. The case was seen later by Dr. Carl Ruedi whose opinion also coincided with the above. It is true that enlarged mediastinal glands often enough follow pertussis and broncho-pneumonia, but suppuration is a rare occurrence, and it is particularly unusual to find any such resulting physical signs as were here presented. This was to me the chief point of interest in the case—the occurrence, namely, of such a large area of flatness over the left front as a result of glandular enlargement, and the possibility of a very probable diagnosis by careful percussion of the boundaries of the area. One of the chief factors in diagnosis was the zone of resonance outside the flat area.

Another interesting feature was the peculiar oscillation of this area between almost absolute flatness and a loud tympanitic note. I am inclined to think this was due, not to the presumed cavity in the glands, but to changes in the tension of the compressed lung. The emptying of the gland caused the lung to assume just that degree of tension which, as is so commonly seen in the retracted lung of pleuritic effusion, produces a tympanitic note.

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Condensed Milk—Condensed milk is an article of very uncertain quality, and the various brands differ much more in composition than the labels attached to them would imply. Some are made from whole milk, some from milk which has been deprived of all or part of its cream; and there is similar variation with regard to the admixture of sugars and other substances. The directions as to dilution are often misleading, and the diluted material does not by any means necessarily correspond at all closely in composition or nutritive value to ordinary milk. These aberrations are seldom to the advantage of the purchaser or consumer.—*The Practitioner, No. 321.*

OPHTHALMIA NEONATORUM.

BY EDWARD A. AYERS, M.D.,

Professor of Obstetrics, New York Polyclinic.

This disease is received by the child either in the interval from the time of the rupture of the amnion to expulsion from the vulva, or after delivery, by touching its eyes with unclean hands. The questions arising are, shall we render the vaginal secretions innoxious by universal irrigation, or by the selection of suspected cases; or shall we inject each infant's eyes following delivery, or treat the infection on its appearance? Prophylaxis in the mother is the ideal. Irrigation is not, however, free from disadvantage. Therefore, it is not fair to make the innocent suffer, unless the sacrifice is much less than the benefit. A healthy woman will not affect the infant's eyes. My custom is to irrigate with a warm bi-chloride solution of 1–3500 when the mother has leucorrhœa, gonorrhœa, or any ulcer, abscess, or abrasion. This is done in the early stage of labor, and is repeated every four hours in prolonged labors, using an antiseptic oil, composed of olive oil, 95 per cent., and oil of cassia 5 per cent; as an offset to the chief evil of irrigation—the washing out of the mucous secreted in labor. Children born of women so treated, do not need injection of nitrate of silver, but should have the eyes washed with soft cotton dipped in a boracic acid solution. If we are in doubt as to a patient, it is the least evil to employ the vaginal irrigation. In cases of gonorrhœa, the child's eyes should be treated after Credés method, in addition to the irrigation of the mother.

Editorial.

ANTITOXIN TREATMENT OF DIPHTHERIA.

THE Antitoxin Treatment of diphtheria is evidently not to be established without a struggle. At first sight the subject seems to be more unsettled than it was two months ago. At that time, but little opposition had arisen, and the statement was frequently made that if the serum did no good, it at least produced no unfavorable results. In the light of facts recently reported, we are compelled to believe that this is not wholly true. Certain untoward symptoms attributable to no other cause have certainly been observed. Cutaneous eruptions have been prevalent after its use, but they are regarded by very few observers as being of serious importance.

Renal symptoms, enlargement of the lymphatic glands, arthritis, and a fluctuating temperature suspiciously like that of septicæmia have been reported by many observers. Of these the kidney symptoms seem to be the most serious. Their occurrence shows a weak point in antitoxin treatment. If the kidney lesions are due to the poison of diphtheria, and if antitoxin is an antidote to this poison, it should certainly prevent these lesions. It either does not do this, or it is itself the cause of them. In cases of mixed infection, it is possible that the renal symptoms result from the irritation of the toxins of germs other than the diphtheria bacillus.

It seems to be the generally accepted opinion of observers that antitoxin has a more or less decided effect in controlling the progress of diphtheria. It also seems clear, that it produces in some cases unfavorable symptoms. It cannot, therefore, with our present knowledge be unreservedly accepted or unreservedly condemned. The matter has resolved itself into the question whether these disadvantages are sufficient to counteract the advantages and condemn the treatment. Several observers who have commented severely upon these unfavorable symptoms, do not believe that they are sufficiently grave to prevent the use of antitoxin. Virchow now holds this opinion. Monté who has observed and reported many of the bad results, has not found them to be permanent or to influence unfavorably the progress of the disease. We should say from a review of the evidence available, that the concensus of medical opinion is still decidedly in favor of antitoxin. The treatment should receive a fair and thorough trial, and should certainly not be condemned on the evidence thus far adduced.

It does not seem possible that any agent so potent as antitoxin is clearly shown to be, can be wholly innoxious. There is not a potent drug in the materia medica which has not the capacity of doing harm as well as good. The greater the potency, the greater is this capacity. Many valuable drugs possess undesirable properties, but are universally used notwithstanding serious disadvantages. It is quite possible that the unpleasant symptoms which sometimes arise after the use of antitoxin are not due to the antitoxin itself, but result from impurities or imperfections which will be eradicated as experience in its production increases. The final verdict must be made up, not from a few favorable or unfavorable cases— not from the results of a single epidemic or season, but must be based upon broad generalizations, after many months of observation. It may in the end be neither complete condemnation or complete acquittal, but a compromise between ascertained favorable and unfavorable results.

OPHTHALMIA NEONATORUM.

PURULENT conjunctivitis of the newborn, although capable of inflicting one of the most terrible disasters which can befall a child, is practically a preventable disease. Prevention is not difficult. In few diseases is there greater unanimity of opinion as to the measures to be employed. There is little excuse for its occurrence on the ground that treatment is uncertain or difficult. Precautionary measures should be taken with every infant; when there is the slightest evidence of a purulent vaginal discharge, the vigilance should be doubled. Upon the birth of the child, the first attention should be directed to the eyes, which should be cared for before the cord is tied. In many cases, infection takes place after birth. Before the head is born the eyes are probably tightly closed and well protected from injurious discharges. Man's first act as he enters this world is to cry, his second is to rub his eyes—a fitting prelude to a pilgrimage through a vale of tears. Whatever the baby's object in doing this may be, the fact remains that his fists go very promptly into his eyes. Any infective matter which may be upon the hands or the face is thus readily innoculated upon the conjunctiva. The first act of the medical attendant should, therefore, be the cleansing not only of the lids and eyes, but, also, of the face and hands. For this purpose there is nothing better than a saturated solution of boric acid. When a purulent discharge is present the child's hands should be carefully kept from the face until a thorough bath can be given.

Complete removal of all infectious matter from the parturient canal by means of antiseptic douches, would be the most effective prophylactic measure. To this the obstetrition objects, as he must consider the welfare of the mother as well as that of the child. Healthly vaginal mucus cannot cause infection of any kind, and is freely secreted for the express purpose of aiding the delivery. Its removal retards the labor and favors lacerations. These objections may be partially obviated by the use of creolin, but creolin is an uncertain antiseptic. An early douch may be proper, but in normal cases repeated douches are not required for the safety of the child, and are objectionable because of their effects upon the mother.

The instillation into the eyes of a two per cent. solution of silver nitrate, according to the methods of Credé, is by universal consent the most reliable prophylactic measure at our command. In hospitals, where the patients are of mixed character and of unknown antecedents, its use cannot be too highly commended. In those institutions where Credé's method is faithfully followed, ophthalmia is almost unknown. A typical hospital report is that of the Sloane Maternity, where a serious case has not been seen among five thousand infants.

In private practice, the conditions as Dr. Ayers points out in his *resumé* of the subject, prepared at our request, are very different. When the physician is well acquainted with his patient, and has made himself reasonably sure that no source of infection exists, thorough use of the boracic wash is sufficient. The reaction after the use of the stronger solutions of silver nitrate is sometimes severe, and it is unnecessary to subject every child to the ordeal. A tendency is apparent among recent writers to use weaker solutions for prophylactic purposes. A one per cent. solution is believed to be as effectual for prevention as a stronger one, and is rarely followed by severe reaction. Such a solution should certainly be used in every doubtful case, and a stronger one, together with douches where a positive source of infection is detected.

Because heroic measures are not deemed necessary in every case, it does not follow that no precautions should be taken. Every mother should be examined with reference to possible sources of infection, and treatment should be instituted in accordance with the conditions.

BLINDNESS has steadily increased in this country during the past forty years. This increase is not only actual, but relative to the population. In some localities where the inhabitants are largely foreign-born and rely upon midwives, the rate of increase has been five times greater than that of the population. Over twenty per cent., and in some regions fully thirty per cent. of all blindness is due directly to ophthalmia neonatorum. Efforts have been made to restrict the occurrence of the disease by legislation. New York was the first state to take steps in this direction, by laws passed in 1890. Since that time, several other states have passed similar laws. The chief clause requires that any midwife or nurse, having charge of an infant, who notices that one or both eyes are inflamed or reddened at any time within two weeks after its birth, shall report that fact in writing within six hours to the health officer, or some legally qualified practitioner of medicine. Although this law has been in force for five years in New York, but twelve convictions have resulted for its violation. Investigations show that the disease has not diminished during this time. Non-enforcement of these laws is due to two grave errors in their construction. The privilege of reporting to some practitioner allows too great latitude. Reports should be made to the health officer, an official who should exist in every town. The second error is the fact that no particular person is made responsible for its enforcement. This should also rest with the health officer, who should be responsible for the enforcement of the law under penalty for negligence.

ONE of the most gratifying features of the reform epidemic which has swept over the city of New York during the past year, is the increased attention that is being directed to the public schools. Many of these schools were in a most unhygienic condition. The spirit of reform has risen, as the possibility of accomplishing tangible results has brightened, and has already affected much improvement in the hygiene of the schools. The large appropriations which have been made for their improvement, if wisely expended, will place them in better condition than they have ever before been.

PROF. E. W. SCRIPTURE, of Yale, has made extensive investigations regarding the causes of nearsightedness in American children. He believes that much of this is the result of school work. Many of the text-books are printed in type too small. Italics should never be used by children under ten years. Some of the work even in the kindergarten is too trying for the eyes of little children. Geographies are especial offenders, as the maps are not sufficiently clear.

Society Proceedings.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

Stated Meeting May 9, 1895.

FLOYD M. CRANDALL, M.D., CHAIRMAN.

Dr. C. E. Nammack presented a boy with a peculiar deformity of the skull. This colored boy, three years of age, had been noticed when only four days old to have a swelling near the anterior fontanelle. There was nothing about the mother's labor that would seem to explain this deformity. The swelling had steadily increased in size, and had become harder. Pressure on the growth gave rise to no symptoms. The diagnosis seemed to lie between hereditary syphilis and cephalhæmatoma, that had undergone calcification. The mother's first pregnancy had terminated at term in the birth of a dead child, and the second one in an abortion at the fourth month. This child was the third. Another healthy child had been born since this one. The child also exhibited the characteristic flattening of the crests of the tibiæ. These exostoses, the speaker said, were often called "Parrot's nodes," and were a frequent accompaniment of hereditary syphilis.

Dr. A. Caillé and Dr. Fruitnight both thought that the deformity was due to rickets.

Dr. L. F. Bishop said he thought the ossification of a cephalhæmatoma offered the best explanation of the occurrence of this deformity.

Dr. Nammack said that he could not agree with those who thought the growth was due to rickets, as this was a condition in which there was a thinning, rather than a thickening of the bones of the skull.

"A Board of Health Bulletin on Prevention of Disease Among Infants, with the Presentation of a New Pasteurizer."—Dr. Henry L. Coit, of Newark, read a bulletin that he had prepared, at the request of the Health Officer of Newark, for distribution among mothers of the lower classes. The more important points in the artificial feeding of infants, were presented in a series of axioms. Besides calling attention to the danger of overfeeding and irregular feeding, this bulletin gives several formulæ for the preparation of modified milk. For a child of from six to nine months, it is recommended to take one pint of "the top-milk," or the creamy portion, one pint of boiled water, and 900 grains of milk sugar; and and for a child between nine months and a year old, one and a half pints of top-milk, one pint of boiled water, and three teaspoonfuls of white sugar. It is advised that the milk be kept in covered glass or earthen vessels, and that the milk be pasteurized, or sterilized at as low a temperature as possible.

Dr. Coit then exhibited a modification of the Freeman pasteurizer, that he had devised with the object of combining in one apparatus a pasteurizer, a sterilizer, and a vessel in which the milk might be properly stored. He had found by experiment, that this apparatus raised the temperature of the milk in ten minutes, to the point requisite for pasteurization, and maintained it at that point for a sufficient length of time.

Dr. R. G. Freeman said, that many pasteurizers were defective, in that they were too complicated, or were incapable of producing and maintaining the desired temperature. It was important that the milk so treated, should be very rapidly cooled, and that it should be pasteurized in the feeding bottles. The apparatus, seemed to him, to fulfill all the requirements mentioned, except the last one.

Dr. W. L. Stowell then exhibited a new electrical centrifuge that was intended for estimating the percentage of fat in milk, and demonstrated the process of testing milk with it. It is similar to the well-known Babcock milk-tester, but it is run by an electro-motor, and is very much more convenient and easy of manipulation. To this machine, Dr. Stowell has attached a hæmatokrit, so that this centrifugal machine can also be used for counting the number of blood corpuscles in a given specimen.

Dr. S. H. Dessau read a paper entitled, "What is Croup?" (See page 421.)

Dr. F. M. Warner followed with a report of twenty intubation cases, all of which had been apparently hopeless until intubation had been performed. Six of the cases recovered. Ten of the cases had received calomel sublimation also, and of these, three recovered.

Dr. J. Henry Fruitnight then read a paper on "The Treatment of Croup by Calomel Sublimation." (See page 429.)

Dr. A. Caillé, in opening the discussion, gave the following clinical classification of croup: (1) Catarrhal laryngitis and stenosis, such as complicates measles; (2) ulcerative stomatitis, with diphtheritic patches and stenosis of the larynx; (3) exanthemata or pertussis, with visible diphtheria and stenosis; (4) primary naso-pharyngeal diphtheria and stenosis, with high fever, and (5) membranous bronchitis, tracheitis, and laryngitis, with absence of the fever, and in the great majority of the cases associated with the presence of the Klebs-Loeffler bacillus. He said that in all these conditions, it was necessary to isolate the patient. Although death from simple catarrhal laryngitis was not very common, he had, nevertheless, met with several fatal cases of this character.

In the treatment of croup, he had long ago abandoned the steam-kettle, believing that it was only desirable to ensure a moderate degree of moisture in the atmosphere of the room. He believed that the calomel sublimations acted beneficially, chiefly through the absorption of the mercury into the system, and the stimulation of the glands of the mucous membrane. He was of the same opinion, regarding the value of intubation for croup, as he had been at the first discussion of this subject in the Academy, seven years ago, viz: that in general practice, intubation was generally preferable to tracheotomy for cases of croup, and also for pharyngeal diphtheria, where the patients could not receive the requisite intelligent after-treatment; but in cases of marked sepsis from diphtheria, tracheotomy was preferable.

Without wishing to bring up for discussion, at this time, the subject of the antitoxin treatment of diphtheria, he desired to say, that in four recent cases of diphtheritic croup, in which several physicians had agreed that mechanical interference would alone relieve the stenosis, recovery had taken place under the antitoxin treatment, without such resort to mechanical relief.

Dr. George McNaughton, of Brooklyn, said that he had seen several cases in which an abscess, at the base of the epiglottis—not a post-pharyngeal abscess—had caused the obstruction. In these cases, there had been only interference with inspiration. After placing a tube in the larynx, he had incised the abscess, and evacuated a large quantity of pus. Out of 2,417 collected cases of tracheotomy, 586 had recovered; out of 5,546 cases of intubation, 1,691, or 30 per cent., had recovered, and out of 505 cases treated by calomel sublimations, 257, or 54 per cent., had recovered. Out of a series of nineteen cases of laryngeal diphtheria, treated with antitoxin, since last December, only two had died, whereas out of the nineteen cases immediately preceding this last series, and not treated with the antitoxin, thirteen died. He had found no practical difference in the action of the various kinds of antitoxin serum in the market.

Dr. George Bilser said that he had treated four cases of laryngeal diphtheria with calomel sublimations, and all had a recovered. Out of twenty-five cases that he had treated by both intubation and calomel fumigation, nine had recovered. He had used from 20 to 40 grains of calomel every two hours, and where death had occurred, he had attributed this to improper use of the fumigations, or to an unusual degree of sepsis.

Dr. J. E. Winters said that an instance of the misapplication of the term croup, to certain clinical phenomena, had recently been brought very forcibly to his attention. He had been called to see, in consultation, a boy, who was said to have been ill with croup for a week. Auscultation revealed the presence of a foreign body, and, on inquiry, it was learned, that the symptoms had developed the day after the boy had accidently swallowed a bit of egg-shell. Tracheotomy was performed, and the shell removed. Regarding the statistics, that had just been presented, concerning the antitoxin treatment, he would call attention to the fact that Dr. White, at the Willard Parker Hospital, had lost all of his first eleven cases of intubation, whereas all his second series of eleven cases had recovered. It was impossible to draw trustworthy conclusions from a few cases of any disease. He had known, seemingly most desperate cases of croup recover without any medical treatment, and even under the most adverse circumstances.

Dr. Warner remarked that he had never observed any difficulty in feeding children after intubation, provided the child was fed while its head was held low down off the mother's lap.

Dr. Fruitnight said that he had obtained the best results with calomel fumigations, in those cases in which this treatment had been instituted quite early.

THE GERMAN MEDICAL CONGRESS.

Held at Munich, April, 1895.

REPORTED BY FLORENCE BRANDEIS, M.D., OF LOUISVILLE, KY.

Prof. Heubner, of Berlin, said, that owing to the vast importance of the serum treatment of diphtheria the convention was more than called for. While clinicians had been wandering restlessly from one remedy to another, in a vain effort to find a specific, Behring had quietly gone to work on the subject of immunity, from which he developed his plan of treatment. The results obtained in various hospitals in the last six months showed almost twice as many cases cured by serum, as by any other form of treatment. Among three thousand serum cases, the number of cures has risen rapidly to eighty per cent. The speaker urged, that diagnosis be based on bacterial tests alone, and that certain cases be called diphtheroid. Among two hundred and twenty-seven cases, twenty-six were complicated. Of the complicated cases, he lost thirteen per cent.; of the uncomplicated, ten per cent. The prognosis depends in large part upon the time at which treatment is begun. He saw no increase in the albuminuria, nor extension of the process to the lower air passages when they were not attacked at the time of beginning the treatment. In nine cases where laryngeal stenosis was evident, operation was not necessary after the effect of the first injection was obtained. Sixteen per cent. relapsed. Paralysis occurred in seven and four-tenths per cent. No serious symptoms were observed after its use. Of sixty-four immunized children, two were attacked by diphtheria within six weeks.

Prof. Baginsky said, that in spite of the fact that he had used every aid within his reach, the mortality from diphtheria during the last era before that of serum, reached forty-eight per cent.; since the serum treatment, thirty-three and four-tenths per cent. During the period when he was without serum, the mortality at once rose to fifty-two per cent. Among the last five hundred and twenty-five cases, the mortality was fifteen per cent. The age of the child was a factor of very great importance in the prognosis. He laid great stress upon the marked improvement in the general condition of the child, which did not always set in the first day, but rather on the second or third day after injection. The influence of the serum in checking the further progress of the membrane was great. In the majority of cases no new tissue was attacked. Heart lesions still occurred, but the cases in which death resulted from heart paralysis were reduced from ten per cent. to six per cent. Though affections of the kidneys sometimes occurred, it should not be ascribed to the influence of the serum. Paralysis was met somewhat more frequently than formerly, possibly on account of the greater number of children who recovered. Of the speaker's cases, those who were treated on the first day showed a mortality of two and five-tenths per cent.; on the second day, ten per cent.; on the third day, fourteen per cent.; on the fourth day, twenty-eight per cent.; on the fifth day, thirty-three per cent. He therefore, summed his experience, as follows: 1st. Heilserum is a very effective remedy, which has never yet been equalled in combatting the ravages of diphtheria. 2nd. Heilserum gains in efficiency, the earlier it is applied. 3rd. The use of heilserum is by no means followed by serious results. The exanthemata accompanying it are of a harmless form.

Wederhoefer, of Vienna, agreed, in all essential points, with Dr. Baginsky's views. The mortality among his twenty-seven cases was twenty-three and seven-tenths per cent., as compared with a death-rate of from forty-five per cent. to fifty per cent. in previous years. Many of the children were under one year of age, and owing to the scarcity of serum, only the more serious cases were injected for a time. Seventy-seven of the three hundred had albuminuria on admission. In closing, he expressed himself as even more enthusiastic than at any time since the treatment was recommended.

Ranke, of Munich, stated that his cases were of a severe type. One hundred and twenty-four were injected, with a mortality of twenty-two and four-tenths per cent. In only ten of these cases were pure cultures of the Klebs-Loeffler bacilli found. In eighty per cent., the cultures were mixed with streptococci. Comparing these results with those before the serum period, a reduction was seen of fifty per cent. in the mortality over the percentages of last year. In no case did the larnyx become infected after the first injection. In forty-four per cent. of the cases, the intubation tube could be removed after twenty-four hours, against twenty-six per cent. of non-injected cases. He spoke, with satisfaction, of the marked improvement in the general condition of the child after the first injection. In all but three of his intubated cases, the tube could be removed latest on the fourth day, against thirty-six per cent. before the serum treatment was introduced. The reduced responsibility and anxiety on the part of the medical attendant, as well as the fact that now a good night's rest was no longer an unheard of luxury, was dwelt upon by the speaker. He thought that the improvement, clinical as well as numerical, could not be accidental. He reported no evil influence on heart, kidney, or other organs and tissues, and claimed that secondary exanthemata and joint affections all ran a harmless course.

Kohts, of Strassburg said that in most cases, the process seemed to make no advance after the injection, when it was made sufficiently early. He reported one case, injected on the second and third days, in which new membranes were found after twenty-four hours. In a second case, treated in the same way, laryngeal stenosis occurred, necessitating tracheotomy, though the process went no lower than the pharynx. Exanthemata and albuminuria were unimportant. His mortality reports have not improved; showing tracheotomy cases, twenty-nine and four-tenths per cent.; non-operative cases, seven and sixth-tenths per cent.; against twenty-five per cent., and six and nine-tenths per cent. in 1893. However, his patients were presented late in the course of the disease. There was no change either in complications or severity of attack.

Seitz, of Munich, reported one hundred and forty cases in which no serious results or complications could be attributed to the serum. As a result of the injections, rash and joint affections were more frequent, but have no injurious effect on the general condition. Recovery was more rapid, also gain in weight.

Stinzing, of Jena, warned against a premature conclusive opinion on the question, but admitted that the new therapy had an undoubted favorable influence, both as regards mortality and necessity of operative interference.

Rehn, of Frankfort, believed formerly in local treatment. Still, from personal experience, he declared that the heilserum was able to call a halt on the destroyer, if administered sufficiently early. He observed neither paralysis nor exanthemata, but thought the course of the disease was shortened, and approved simultaneous local treatment. He considered immunizing injections as unwarranted, as the dose and duration of effect were not known, and the harmlessness to the healthy organism was not yet proven.

Ranchfuss, of Petersburg, reported an improvement over previous years, of twenty-one per cent. in his mortality records.

Many other speakers approved the use of the serum, and regarded Behring as a benefactor of the race. No one disapproved its use.

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Sudden Death After the Use of Antitoxin—A death which recently occurred in Brooklyn, apparently from the use of antitoxin, has caused much comment. The antitoxin used, was a bottle of Behring's antitoxin No. II., *opus* 159, tested January 30th, 1895. Dr. Rosa Engelmann, of Chicago, reports a case treated with the same antitoxin, viz : *opus* 159, tested January 30th, 1895, with entirely favorable results. The patient was a boy of four years, who had been under the care of Dr. M. P. Hatfield since the beginning of the attack eighteen hours before. The disease was one of moderate severity. The recovery was rapid and complete, and no bad symptom whatever was observed after the antitoxin injection.

Evidence from various sources seems to show that the antitoxin of this lot was of good quality. Dr. E. H. Wilson, bacteriologist of the Brooklyn Board of Health, after strict examination, believes that the cause of death was not inherent in the antitoxin. Dr. W. H. Park, of the New York Board of Health, examined other bottles of the same lot, and found no living germs of any kind. He believes that "the unfortunate results, which followed the administration in the case referred to, cannot be attributed in any way to the antitoxin employed." The cause of this sudden death has not yet been satisfactorily explained.

Current Literature.

I—MEDICINE.

Griffith, J. P. Crozier: The Hygiene of Children. (*University Medical Magazine,* 1895, vol. vii,. No. 7).

In the artificial feeding of infants, cow's milk is the most satisfactory substitute for the infant's natural food. There are, undoubtedly, chemical differences in the casein of the two kinds of milk, which we are unable to entirely overcome, but we are able to make a food of approximately the same composition as breast milk. After study of tables showing the composition of the two milks, the author shows that our work is clearly cut out for us, and consists in diluting cow's milk sufficiently to reduce the albumenoids to the proper percentage, and then in adding cream and sugar in sufficient amounts to make up for the loss of these ingredients. Milk sugar is that naturally present in milk, and it certainly seems rational to employ it. In making a milk mixture, the quality of the cream must be borne in mind, and the proportion varied accordingly. To overcome the acidity of ordinary cow's milk the author uses soda instead of lime-water. He proposes the following mixture :

Milk	1 ounce.
Cream (skimmed; 16 per cent. fat)	2 ounces.
or	
Cream (centrifugal; 20 per cent. fat)	1½ "
Soda-solution	½ ounce.
Milk-sugar	1 measure.
Water, enough to make	8 ounces.

Instead of making a sugar water, the author uses the sugar in a small measure constructed for the purpose, which will hold three and three-eighth drachms. A soda solution is made of the strength of one grain of bicarbonate of soda to one-half ounce of water. A dozen packages of bicarbonate of soda each containing one drachm are ordered. One of these dissolved in a quart of water makes a solution of the proper strength. The chief advantage of soda over lime-water is the fact that it does not change during the process of sterilizing.

In using the mixture, the whole amount needed for the twenty-four hours, should be prepared in the morning when the milk arrives, the proper amount placed in each bottle according to the age of the child, and the bottles placed in the sterilizer and heated to the degree of temperature desired. The author believes that modified sterilizing is to be preferred for general family use to Pasteurizing. If the sterilizer is employed with the hood removed and the lid set slightly ajar, and a brisk but not too hot fire is employed for about forty-five minutes, the temperature of the milk does not go above 80° or 90° C.—a temperature which does not materially affect the digestibility of the milk, yet, which is sufficent to render the milk practically safe for twenty-four hours.

Where predigestion of the food is to be combined with sterilizing, as is very often necessary in cases of illness, we may employ the following formula:

STERILIZED PEPTONIZED MILK MIXTURE.

Water	8 ounces.
One-half of a peptonizing tube or One peptonizing tablet	

Dissolve.

Add milk	8 ounces.

Peptonize.

Then use—

Peptonized milk	2 ounces.
Cream	1½ to 2 ounces.
Milk-sugar	1 measure.
Water enough to make	8 ounces.

Sterilize as already described.

This formula contains the same proportions as the preceding one, with the exception of soda, which is increased in amount. No soda solution need be added, since the soda in the peptonizing powders or tablets more than takes its place.

The author reports also a series of observations upon the feet of children. It is often supposed that a baby's foot because plump and well-rounded is therefore shapeless. The author by many impressions and tracings finds that the baby's foot is of the same shape as the adult. He believes that shoes should be rights and lefts, and that more care should be taken in fitting the baby's foot.

For the purpose of measuring the length of the baby, the author presented a measuring rod similar to the foot measures used by shoe-makers but much enlarged. It was four feet in length, and the pieces which run transversely to the length were eight inches long and were lined with felt. To use it, the baby should be laid on its back upon a firm mattress. The end piece can then be placed above the head and the sliding piece moved along until it touches the foot, both toes and heel.

Adams, S. S.: Typhoid Fever in Infants under Two Years of Age. (*American Journal of Obstetrics.* 1895, vol. xxxi., page 175).

Previous to 1840 it was believed that infants were immune against this disease. A disease was then often seen called "infantile remittent fever," which was probably typhoid. The same anatomical lesions exist in the infant that exist in the adult. As far as infants are concerned, the proof of the presence of the bacilli is still negative. The swelling of Peyer's patches shows itself early, and is most frequently seen near the ileo-cæcal valve. It is suggested, that the difference in the amount of destruction may be due to the bland food which infants commonly take.

In the infant, restlessness is marked and fever persists for days, with only slight irritation of the gastro-enteric tract. The temperature, which usually ranges higher than in adults, is well borne. There is usually nothing characteristic in the appearance of the tongue; vomiting is rare; the appetite uncertain. Constipation is usually persistent throughout the entire course of the disease. The typical spots are rarely seen. Tympany is rare; hæmorrhage is also rare. The spleen if enlarged is detected with difficulty. The liver and kidneys are probably unaffected. Epistaxis is rare as is also bronchitis. Relapses are not infrequent.

The paper closes with the report of a case of typhoid fever in a child of two years, with the report of the autopsy.

Lee, Benjamin: The Prevention of Blindness. (*Annals of Hygiene*, 1895, Vol. x., No. 4.)

The author gives an extended review of the preventable causes of blindness, many of them beginning with the earliest hours of life. He laments the fact, that while the state is ready to provide relief for defectives, it is ever slow to prevent their existence. Purulent ophthalmia of the newborn, is the cause of a large percentage of blindness and is preventable. It is an infectious disease and is due strictly to infectious matter which has come into active contact for a somewhat prolonged time, with the conjunctiva. The author holds, that one-third of those now blind, might by prompt and proper treatment have been saved from this calamity. Active measures have long been taken in European countries to prevent this class of blindness. The state of New York has a law which requires midwives and nurses to report every case of inflamed or reddened eyes occuring within two weeks after birth to some legally qualified physician.

Although the eye of the child who has escaped ophthalmia in infancy, is as a rule, good before attendance at school is begun, we then have a larger and larger percentage of pupils with imperfect eyes as they advance from the kindergarden to the high school. It seems certain that many of the imperfections developed during the years of school life are preventable. The author suggests the following causes for such imperfection :

(1) By using the eyes constantly at short distances they soon become of value only for seeing objects close at hand.

(2) By using the eyes too constantly, and too long at a time. The eye is a very delicate organ, its parts become weary like the rest of the body. If overworked serious results follow. The eyes should never be used when they ache, pain, or smart, or when vision is weak or blurred.

(3) By using them when weak from sickness. After the diseases of childhood, as measles, scarlet fever, whooping-cough, etc., the eyes are often left weak, and may be many months in recovering their full strength. If at such times they are much used in reading or studying, they are very liable to receive permanent injury. To this cause may be laid a large proportion of the defective eyes in our schools.

(4) By using the eyes in insufficient light. Very many of our school-rooms are poorly lighted. Children cannot see in them on dark days. Rooms are made still darker by the use of curtains and blinds, which are often partly closed or drawn and are placed at the top instead of at the bottom of windows. Windows are very often too small. They are often filled with flowers. If children study in the evening, it is too often with a poor light.

(5) The print of school-books is too often fine and indistinct.

(6) Especially is this the case with regard to maps, which are in the highest degree confusing and distressing to the vision.

(7) Polished black-boards are both distressing and

trying to the eye, the writing on them not being visible except from certain points of view.

(8) The chalk-dust caused by the use of the blackboard and of a dry cloth or eraser is often very irritating to the eye.

In what way can the state prevent these deplorable results and preserve the normal vision of its people?

First. By taking pains that school-directors shall be persons of intelligence and education, and that positions on school-boards shall not be the rewards of political tricksters and ward workers.

Secondly. By issuing instructions to school-directors, as to the construction and maintenance of school-edifices, especially with regard to the proper introduction of light.

Thirdly, By making positions on school-boards open to women, who, as a rule, are more keenly alive than men to the necessity for guarding the health of children in every respect.

Fourthly. By compelling all applicants for positions as teachers, to pass an examination on the hygiene of the school-room and especially on the hygiene of the eye.

Fifthly. By printing and distributing, not only among these functionaries, but also among parents and the public generally, brief circulars of information and instruction on these subjects.

Sixthly. By obtaining the introduction into public prints and the daily press of articles of the same nature.

Seventhly. By diminishing the hours of study, especially in the primary grades, and diminishing the amount of reading and writing now required during study hours, by encouraging the use of object teaching and illustrated lectures.

Eighthly. By stamping out all eruptive contagious diseases, which are known to have inflammation and ulceration of the eyes or asthenopia as their sequelæ.

Leonard, Pierre I.: The Preservation of Sight and Hearing with Especial Reference to the Eyes of School Children. (*The Medical Herald,* 1895, Vol. xiv., No. 3.)

The examination of the blind in asylums in this country and Europe, shows that about forty-two per cent. are blind from preventable causes, twenty-four per cent. are probably preventable, and thirty-four per cent. unpreventable.

The census of 1890 shows 50,411 blind in the United States. Aurists who have examined many thousands of deaf persons, prove that deafness is due principally to these slowly progressive processes in the middle ear, which have their origin in the naso-pharyngeal mucous membrane. The most prolific cause of blindness is ophthalmia in the newborn. Different authors show that thirty to forty per cent. of all blindness is due to this cause. It is absolutely preventable. In Europe much more attention is paid to the eyes of school children than in this country. During the period of school life, certain affections of the eyes increase. Examinations of school children in different countries show a percentage of near-sighted eyes from eleven in the youngest, to sixty-two in the oldest.

The necessity for carefully watching the eye-sight of children at school is demonstrated by the following facts:

1. Near-sightedness is very rarely present in early infancy.
2. At twelve, it is present in about twenty per cent. of the cases.
3. Close work with its associated conditions is the principal exciting cause.
4. Children are apt to choose occupations for which their eyesight is eminently unfitted.

Regarding the lighting of school-rooms and care of the eyes, the author lays down the following principles:

1. There cannot be too much light in a school, for on dark days every part of the room should have good light.
2. The ideal of the oculist is light derived from a glass roof.
3. Windows should be on the left of the scholars, and as many windows as are consistent with the strength of the wall.
4. Light should not dazzle, this can be managed by curtains.
5. Windows should not let light on the face horizontally, therefore, curtains should roll from the bottom, leaving the upper part of the window free.
6. Scholars should not face the light.
7. Black-boards should not be between windows.
8. Abate the rule which forbids scholars to look up, as this rests the eye.
9. Books, dictionaries, charts, should all have large print.

10. There should be a distance of twelve to fourteen inches between the eyes and books.

11. Holding objects close to the eyes involves a muscular effort, that of converging the eyeballs and at the same time accommodating the lens by the ciliary muscle, which contributes to the increase of existing near-sight, if it does not originate it.

12. Window glass should amount to about one-fifth of the floor surface.

13. The tint of the wall should be a light gray or light blue.

14. Curtains should be a light gray.

The author believes that glasses, while they frequently are required, are used more often than necessary. Proper treatment, tonics, and rest will not infrequently do for the child more than glasses.

Northrup, W. P.: Infantile Scorbutus. (*Gaillard's Medical Journal.* 1895, Vol. xl., No. 5.)

Causes. In reported cases the cause has been found to be the use of proprietary foods and condensed milk, that is, lack of fresh food. Age of patients is most commonly from nine to fourteen months; social scale, well-to-do.

Diagnosis. Rheumatism of the legs and spongy gums are sufficent symptoms upon which to make a diagnosis of scurvy. Great sensitiveness of the legs is the rule. Scurvy may be mistaken for rheumatism, stomatitis, rickets, osteitis.

Lesions. Hæmorrhage (diapedesis) beneath the periosteum of the end of the femora, separation later of the epiphysis; fusiform swelling of the thighs over subperiosteal hæmorrhages; hæmorrhages into the muscles, into the skin, and into the mucous membranes.

Symptoms. Excessive tenderness in handling, pain on motion, fusiform swelling of thighs, spongy gums, hæmorrhagic gingivitis. The latter rarely occurs before the eruption of the teeth. Pseudo-paralysis frequently occurs; anæmia is commonly present. Scurvy is frequently superadded to rickets, but seems to have no constant relation to it.

Prognosis. When properly recognized and treated, cure is rapid. When untreated it is often fatal.

Treatment, Correct the errors in diet; give fresh milk and fresh fruit juice.

Summary. Scurvy occurs in good class practice, requently in the country; scurvy treated, makes a prompt recovery. If the mother says rheumatism of the legs and you find spongy gums, that is scurvy.

Sanson, Earnest: Observations on Certain Symptoms Which Accompany the Wasting Disorders of Infants. (*International Medical Magazine,* 1895, Vol. iv., No. 3.)

Cutaneous Symptoms. Among the earliest symptoms of malnutrition is an eruption, having the two-fold character of erythema and eczema, which appears on and about the perineum. When it first appears it is of a rosy hue and disappears upon pressure. Later, it presents two portions, a larger zone of red color, abolished by pressure, and a centre portion showing a deeper tint and being either moist, or harsh from an exudation which has become dry. It is seen especially, in children who are suffering from thrush, but it frequently occurs independently of this disease. It is due to a morbid state of the secretions, causing them to act as irritants to the skin.

It may disappear if the diet is changed to a rational one. The perineum should be washed, not with soap, but in warm water in which oat meal has been mingled, and afterward dusted with fuller's earth or lycopodium. Starch is unsuitable, as it cakes into little masses which cause irritation. In some cases, the erythema does not disappear, but takes on a worse character. When the wasting is taking place rapidly, the parts may be œdematous, and become fissured. Malnutrition may produce this alone, the diarrhœa so frequently present, acting as a provoking cause. Where there is much abrasion, a powder of nitrate of bismuth or oxide of zinc may be employed. In some cases an ointment of oxide of zinc is more efficient.

Abdominal Symptoms. Flatulence is one of the most frequent of abdominal disorders among wasting children. This is usually more severe in artificially fed children, but is sometimes seen in the breast fed. The pains associated with flatulence make the child extremely irritable. The abdomen in advanced cases becomes tense, and the superficial veins are strongly defined. The most effective immediate treatment is the administration of an aromatic, which stimulates the muscles of the stomach and bowel to expel the flatus. One of the most efficient remedies is the spirit of nitrous ether, of which ten drops may be administered in a teaspoonful of water. The most useful prescription which the author has used, consists of two grains each of powdered rhubarb and bicarbonate of soda, and three minims each of fœtid spirit of ammonia, and spirit of nitrous ether; given in one teaspoonful of dill water. It should be remembered that flatulence is a symptom, and these measures are simply palliative.

Constipation is a very frequent accompaniment of flatulence. When the passages are dry, and hard, dry masses are passed, fissure of the rectum is not uncommon. The passage of such masses is greatly faciliated by an injection of olive oil. Constipation frequently occurs through imperfect peristalsis and weakness of the muscles, whereby the contents of the bowel are retained an undue length of time. It is therefore, a two-fold difficulty, due to mechanical causes and dyspepsia. In its treatment proper regulation of the diet and intervals of feeding are important. Rubbing olive oil into the surface of the abdomen is a very effectual means of treatment. The administration of medicine should be avoided if possible. A little olive oil administered once or twice a day is often efficient.

Diarrhœa is an early concomitant in many cases. When it is not continuous, it frequently appears at intervals. The passages are unnaturally large and very irritating to the skin. Sometimes it is a passive flux without pain; at other times the signs of pain are great. Diarrhœa occuring without fever in young infants is usually not a disease, but a symptom of dyspepsia. Removal of the cause is of the first importance, therefore. When it persists, wasting takes place rapidly.

When wasting and exhaustion have proceeded far, certain central phenomena must be looked for. In the earlier stages the child is very irritable; it cries frequently, and takes ravenously the food that is administered to it, and, though satisfied for a little while, soon cries again, with evidence of pain. In the later stages, however, there may be an unexpected quietness; the infant lies listless and lethargic. This is by no means a favorable sign.

The following are the *post-mortem signs* usually observed in cases of progressive wasting of infants: The subcutaneous fat, and, indeed, the fat of the whole body, has almost entirely disappeared; the walls of the stomach and intestines are very pale and thin, and in some cases a portion of the stomach may have undergone post-mortem softening. The gall-bladder is distended with bile. The liver is congested, the deep color, due to its being soaked with venous blood, contrasting with the pale hue of the other viscera. So far the appearances are precisely those which are observed in cases of starvation. In addition to these signs, the pale mucous membrane of the small intestines may be seen in some cases to present patches, here and there, of a greater vascularity. The lymphatic glands, in connection with the intestines, are notably enlarged ; Peyer's glands in the small, and the solitary glands in the large intestine. Frequently, also, the mesenteric glands are enlarged. The signs are, in fact, those of (1) starvation, (2) anæmia, (3) irritation and inflammation of the glands embedded in the mucous membrane of the intestines, (4) enlargement of these and the mesenteric glands, consequent upon the protracted disturbance to which the lymphatic tissue is subjected.

Engelmann, Rosa: Scarlatina and the Streptococcus Infection. (*Journal of American Medical Association,* 1895, Vol. xxiv., No, 10.)

After a careful review of this subject as it is at present understood, the following conclusions are drawn by the the author :

1. A specific scarlet fever germ or toxin is not yet demonstrated.
2. The disease is associated with a streptococcus infection.
3. A streptococcus is admitted to be the cause of surgical scarlatina and puerperal fever.
4. A streptococcus is admitted to be the cause of erysipelas.
5. The frequent association of the latter with puerperal fever, and it in turn with surgical scarlatina.
6. The relation of idiopathic scarlatina to surgical scarlatina and puerperal fever is acknowledged.
7. The identity of the streptococcus pyogenes and erysipelatis is advocated.
8. Clinical records showing the association of suppuration, erysipelas, and scarlatina in the same subject, is suggestive of the parallelism of these three infections and the probable biologic identity of these several streptococci.
9. Clinical differences and varying susceptibility to the one or the other is due to heredity, age, anatomico-

physiologic conditions, congenital disease, environment, life history of the invading host, and its avenues of entry.

10. Idiopathic erysipelas should disappear from the nomenclature; analogously, idiopathic scarlatina may meet a like fate.

11. Natural immunity may be due to heredity and healthy fully developed structure.

12. Acquired immunity is to be sought from antitoxins of the disease, or through blood serum therapy that will revolutionize the treatment of this dread disease.

13. Inunctions are disapproved of, antiseptic baths better meeting anti-bacterial and physiologic indications.

Bennie, P. B.: The Treatment of Diphtheria by Mercurial Salts. (*Australian Medical Journal*, 1895, Jan. 20th.)

The author reports thirty-eight cases of diphtheria, fourteen being under three years of age in which bichloride of mercury was used as the chief medicinal agent. In severe cases he adopted Jacobi's recommendations in regard to the size of dose, but the degree of dilution was double or treble. These cases were treated during a period of five years, the results were so much more favorable than those in the author's previous experience, that he believes that the mercury had much to do in securing the satisfactory results. He believes that many have failed from using too small a dose and insufficient dilution.

Einhorn, M.: The Albuminoids of Iron for Children. (*American Therapist*, iv., 3, 1895.)

In the course of a recent discussion, the speaker said, that good results had been obtained clinically, from most preparations of iron, and particularly with the more recent preparations of the albuminoids. With this latter preparation, we imitated the method by which iron was ordinarily introduced into the system from the food. He had no experience with hæmagallol, but he had tried a very similar preparation to it—ferratin. The object of using this preparation was also the same—the introduction into the system of a form of iron similar to that drawn from the food. It had first been obtained from the livers of swine, but it had afterwards been made artificially. He had used it in cases in which the stomach had been too irritable to tolerate well the ordinary preparations of iron. He had used it in about fifteen such cases without observing any digestive disturbance produced by it. He could not say that it increased the quantity of hæmaglobin more rapidly than the other preparations of iron. An important part of all methods of treating anæmia was attention to the diet and the general nutrition.

Luckey, Geo. W. A.: The Indirect Color Range of Children and Adults. (*American Jour. of Psychology,* 1895, vi–4.)

It has been shown that only a small part of the retinal surface is sensitive to fundamental color impressions; that the retina is sensitive to impressions of blue, much farther from the centre than to any other color impression. The action of the peripheral retina varies greatly, in different directions from the centre. The ranges of all colors extend further in the nasal and upper parts than in the lower and temporal parts of the retina. The centre retina is more sensitive to color and form impressions, while the eccentric retina, as we pass toward the periphery, is more sensitive to light and motion impressions. The author, after a long series of experiments most carefully carried out, concludes: First, That children cannot see colors as far in indirect vision as adults, but as compared with adults they show a greater proportional range for black and white than for color.

Second, Difference in sex seems to make no perceptible difference in the extent of the color range.

Third, Color training does not seem to increase the color range (except in the case of red,) but makes itself felt in a greater variety of shades and tints, as seen in indirect vision.

Browne, Lennox: The Etiology of Diphtheria and Pseudo-Diphtheria. (*Liverpool Med. Chir. Jour.*, 1895, No. 28.)

The author discusses the predisposing causes of diphtheria under three heads:

A. *Climatic and Habitation-surroundings*—Evidence upon this subject, although profuse, is extremely contradictory and uncertain. It is well known that it is more prevalent in regions in which the soil is clayey and wet. It is more common in temperate than in torrid or arctic climates. It is found in valleys rather than on the hilltops, and prevails in those months in which the rain-fall is greatest. Insanitation, the author believes, may be directly and primarily a cause. He holds also that in cases of diphtheria, attributable to contagion or importation, the infection-element is highly influenced in its development by anti-hygienic conditions of individual or local surrounding; and, lastly, that such anti-hygienic conditions are not only responsible for the development of diphtheria, but that they do unfavorably influence the gravity of an epidemic or of an individual case. Among the reports of forty-five epidemics, evidence of defective sanitation was discovered in 93.3 per cent. The nature of these assigned causes may be classified as follows:

Cases	due to	Insanitation or Polluted Water, - -	29
"	"	Infected Milk Supply, - - -	4
"	"	Contagion in Schools, etc., - -	11
"	"	Doubtful, - - - - -	1
			45

This proves that milk is not as common a source of infection as it is usually thought to be.

B. *Preceding or Concurrent Epidemics of other Specific Fevers*—The fact, that scarlet fever is frequently accompanied by true diphtheria, is undoubted. The author believes that measles is also complicated by true diphtheria more frequently than is usually supposed. As a complication or concurrent disease of small-pox it is most rare. It has, however, seemed to be more common during epidemics of enteric or malarial fevers.

C. *Constitutional Predisposition.*—The author believes with Sir William Jenner that the influence of family constitution is decided in determining the occurrence of diphtheria. This is, perhaps, explained to a certain degree by the fact that obstruction of the naso-pharyngeal passages and the occurrence of adenoid growths are more common in certain families. The author is strong in his opinion that diphtheria rarely occurs in a child under seven years, who is not a subject of these glandular overgrowths. In many cases of diphtheria in young adults, tonsillar enlargement will be found to have persisted. It has been particularly noted in nurses, who have taken the disease.

As to the exciting cause, the author accepts unhesitatingly the Klebs-Loeffler bacillus. He describes in detail this bacilli, and also the various forms of germs which may be found producing so-called mixed infection, viz: diplococci, staphylococci, and streptococci. In view of the action of these various micro-organisms, he divides diphtheria into three general classes:

(1) True, pure, or simple diphtheria.

(2) Pseudo- or false diphtheria.

(3) Impure or complex diphtheria; or, as Chaillou and Martin have called it, "diphtheria with associations."

The second and third classes are further divided according to the complicating germ present into ten subdivisions. Although these complicating germs have a marked influence upon the prognosis, the factor of greatest importance in regard to the mortality of the disease is the age of the patients.

The toxic influence of diphtheria is felt mainly through its action on the vaso-motor centre, with a consequent disturbance of certain vital functions; and so far as statistics and experience enable us to judge, the manifestations, considering them in the order of their occurrence, are represented by derangements of the following systems: Renal, lymphatic, cardiac, respiratory, and nervous. Important as has been the aid of the fascinating science of bacteriology in the detection of this as of many other diseases, there are still many other factors of practical importance which are not to be settled in the laboratory of the scientific investigator, but must depend for their solution on the clinical skill and common sense of the medical practitioner.

Grimsdale, F. B.: A Case of Fœtal Ascites. (*Liverpool Medico-Chirur. Jour.*, 1895, No. 28.)

Cases of this character are rare, and they are pathologically obscure. No adequate fœtal lesion has been found to account for them. It has been necessary to call in some complicated pathological process partly due to the mother and partly to the fœtus in order to explain the condition. In the present case the mother had suffered from albuminuria and general anasarca. After the delivery of the head with forceps it was found impossible to deliver the body. Examination showed a greatly distended abdomen. Delivery was effected after puncture of the abdomen and the liberation of a large amount of fluid. The whole body of the child was œdematous and pitted on pressure. The surface of the trunk and limbs was covered with petechiæ. The abdominal wall was found to be one inch in thickness, due chiefly to watery adipose tissue. The lungs were collapsed, pale, and pink. There was no fluid in the pleura or pericardium. The liver and kidneys were, to the naked eye, normal. The heart and other organs were normal also. A definite lesion of the liver and kidneys was found upon microscopic examination, but its character is not stated. The author believes that various lesions may cause the condition. In this case he believes that the disease was primarily fœtal, to which the maternal nephritis was secondary.

Uffelmann: Investigations Relating to the Viability of the Typhoid Bacillus. (*Archives Kinderheilkunde.* B. xviii., H. i., ii.)

The pure cultures and the bacillus mixed with feces were dried and kept under observation for a long time. The bacilli were found to stand the drying test much better than the cholera bacillus. In dried earth from the garden, in white sand and on pieces of clothing, the bacillus lived as long as two months. The dust from these dried substances infected gelatin and milk from which the pure cultures were obtained. This shows that the typhoid bacillus may be transmitted through the air.

Wilmarth, A. W.: The Early Treatment of Mental Disease in Children. (*Jour. Amer. Med. Asso.*, 1894, Vol. XXV., 24.)

This paper is based on the examination of one thousand histories at the Elwyn Institution for the Feeble-Minded. About three hundred autopsies are also reported. The mental disease in three hundred and twenty of these cases seems to have originated from injury or acute disease. The author believes, that acute disease is one of the most important factors in the production of mental disease in childhood; that early and prompt treatment will do much to prevent the development of cerebral or mental disorders. The best possible hygienic conditions should be obtained, and the child should be at once removed from all excitement and worry and should be prohibited from all mental work. Regulation of diet is of the greatest importance. The author regards iodide of iron and iodide of potassium as among the most valuable remedies. The preparations of arsenic are less efficacious. Bromides are sometimes valuable in small doses; in large doses they mask the symptoms of the disease and seriously disturb the digestion.

Primrose, A.: Peripheral Lesions in Infantile Paralysis. (*The Canadian Practitioner*, Vol. 20, No. 3.)

A dissection of a leg amputated above the knee was presented by the writer. The patient was a boy of thirteen, who had suffered from infantile paralysis. Amputation was performed, because of the "dangle-leg," which would swing forward with the body at each step and knock the crutches from under him. The muscle was almost wholly represented by fibrous tissue, with very few muscle elements. The feature especially worthy of note was the fact, that while there was little or no fat in the substance of the muscles themselves, and between the muscles, the subcutaneous fat was very abundant. The layer of skin and subcutaneous fat at the middle of the calf was one-half inch in thickness, the total thickness of the limb being two and one-half inches. Nearly one-half of the thickness of the limb was therefore made up of skin and fat. Marked atrophy of the nerves distributed to the parts was also present, and the muscles were much diminished in size. The case proves that the statements frequently made regarding the subcutaneous fat in infantile paralysis are not universally true. The writer believes that the subcutaneous fat does not, as a rule, undergo atrophy in such cases.

Maffucci, Angelo: The Toxic Products of Tuberculosis. (*British Medical Journal,* No. 1,777, p. 12.)

Angelo Maffucci has a long and important article on the toxic products of the tubercle bacillus in *Il Policlinico,* January 1, 1895. As the result of many experiments, he feels justified in affirming that in culture preparations of tubercle where the bacilli are dead, there exists a toxic substance which resists the action of time, heat dessication, sunlight and gastric juice, and this substance is not a product of bacillary secretion, nor derived from the nutrient medium, but a poison contained in the substance of the bacillus itself and due to its disintegration. Maffucci found that culture preparations three years old had not lost their toxic power; that fresh as well as old cultures submitted to the action of 65° to 100° C. for an hour or more, though this might destroy the vegetative power of the bacillus, had little or no effect on its toxic power, nor did dessication for fourteen months destroy it. Sunlight from fifteen to forty-five days at 32° C. followed by exposure to heat, 100° C., and then treatment with gastric juice, had no effect on toxicity. This toxic substance is very active in its power, as an infinitismal dose sufficed to cause marasmus; moreover, it may be transmitted by tuberculous parents to the fœtus without any transmission of the bacillus itself, causing abortion, or marasmus in those fœtuses that are born alive; it may also be eliminated by the milk. The action of this toxin is to cause inflammation and necrosis of the tissues: in concentrated solutions, it causes tuberculous abscess; diluted it produces disturbances of the circulation, catarrhal inflammation, and alteration of the red corpuscles of the blood; by passing repeatedly through the kidneys it may set up a parenchymatous nephritis, or a fatty degeneration of the renal epithelium.

Strauss: The Presence of the Tubercle Bacillus in the Nostrils of Healthy Individuals. (*Archives Kinderheilkunde,* B. xviii., H. i-iii.)

The author examined the secretion from the nostrils of healthy persons who had lived in close contact with the tuberculous, and found virulent tubercle bacilli. Guinea pigs were inoculated, and the presence of the bacilli proven. The nostrils of twenty-nine persons were examined, the tubercle bacilli being found in nine.

Bujwid: The Examination of City Milk for Tubercle Bacilli. (*Klinische Rundschau.* viii. *Jahrgang,* No. 52.)

Twenty-eight specimens of the ordinary milk as sold in the markets were examined, relative to the presence of tubercle bacilli. Several specimens of the milk were mixed, and thirteen dogs and fifteen guinea pigs were injected. The milk was allowed to settle, and that used for the injection was removed from the bottom of the vessel by means of a pipette. There followed a small circumscribed swelling at the site of the wound which in a few resulted in abscess, in the pus of which the staphylococci and bacilli (B. Coli.[2]) were found. None of the animals died as a result of the treatment, and not in a single case was tuberculosis produced.

The author, while realizing that the number of experiments are too small to establish a point positively, believes that the tubercle bacillus is not so frequently present in milk as many writers would have us believe.

Furst: Scurvy. (*Archives Kinderheilkunde,* B, xviii, H i, ii.)

Scurvy develops most frequently between the ninth and twelfth months. No cases have been reported as having occurred before the fourth or after the twelfth month; in fact very few cases develop after the eighteenth month. The majority of cases appear late in the winter or in the spring. The early symptoms are variable and may appear quite suddenly. Ordinarily there is some gastro-intestinal disturbance. There may be a mild degree of bronchitis. The child refuses to walk, sit or stand, and endeavors to limit the motion of the body as much as possible. They become markedly hyperaesthetic and cry when disturbed or moved in any way. The entire body appears to be sensitive and painful. The temperature is but slightly elevated if at all. There is more or less anæmia and general poorliness. These prodomal symptoms continue for several days, and they are followed by a diffuse swelling of one of the extremities. This swelling will be found to involve neither the joint nor the epiphysis but the lower diaphysis. The enlargement is tense, cylindrical, and spindle-shaped. The skin is pale and glistening. In its further course the swelling may increase until the whole extremity is involved, or two of the extremities may be involved at the same time. Circumscribed swellings may appear on the ribs, the scapula, the bones of the skull and the os ilii. Oedematous areas sometimes appear on the dorsum of the foot over the Malleoli and on the eyelids.

A very important symptom is the hæmorrhagic swelling of the gums; it is not always present, in fact it is usually absent in young children who have no teeth. Another prominent, although not so constant a symptom is, the hæmorrhage into the skin and the various organs of the body. Fever, as mentioned before, may be present, but is apt to be low, and is of no importance as a symptom. The pulse is usually small, soft and frequent. The appetite is poor, the sleep restless. If this disease is not recognized and treated, it may continue for two or three months. The longest case on record is of five months' duration. The prognosis is good. Many cases recover with change of diet alone. Whatever the diet may have been, fresh Pasteurized cow's milk should be given. Fruit and meat juices are suggested under treatment.

Holyruon: A Case of Pancreas Stone Colic. (*Jahrbuch Kinderheilkunde*, B., xviii., H., i. ii.)

The patient was suddenly taken with severe pain in the left hypochondrium. The pain was located at the junction of the mammary line and free border of the rib. At the onset of the attack there was noticed a marked increase in the salivary secretion. The duration of the attack was about twelve hours, and was not influenced by morphine hypodermatically. The urine, previously normal, contained a small quantity of albumin the day following the attack, but it disappeared the next day. A second attack followed in a few days, and this time pilocarpine, one-half gram of a one per cent. solution was injected, apparently without much effect. The second attack was more severe than the first, and was accompanied by a slight degree of fever. Repeated attacks followed; the prominent symptoms being the localized pain, excessive salivary secretion, fever. Sugar was present in the urine after each attack but soon disappeared.

Holt and Herter: A Case of Rapid Gliosis of the Spinal Cord. (*Medical News*, Vol. lxvi., No, 2.)

At a recent meeting of the New York Neurological Society, the authors reported the case of a male child, aged one year, with a good family history, in whom, three months before coming under observation, a weakness was noticed in the right arm and hand, and the head began to droop forward. The motor paralysis in the right arm gradually increased, and finally there was complete loss of power in both arms, and in the shoulder-muscles with atrophy. The muscles of the neck were exceedingly rigid, and the head was carried stiffly, slightly in advance of the normal position, with the face looking directly forward. There seemed to be some loss of power in the legs. The knee-jerks were exaggerated, especially on the right side. Ankle-clonus was present on both sides. There was considerable dyspnœa and coarse râles could be heard over the entire chest, but there were no signs of consolidation. The temperature showed irregular daily variations, ranging from 100° F. to 105° F., and even higher. There was occasional vomiting. The pupils were equal, normal in size, and responsive to light. There was partial analgesia of the body below the arms. The respirations ranged from 32 to 52 per minute. After the lapse of a month, slight strabismus was noticed, and the head was rolled continually from side to side. At times there was marked cyanosis. The temperature rose to 106°, and death took place.

Upon post-mortem examination, a grayish projecting mass was found occupying almost the entire right side of the medulla, and a larger part of the left side. The medulla was considerably enlarged from before backward, and from side to side. There was also considerable enlargement of the cord as far down as the eighth cervical segment, and from this point to the sixth dorsal there was some enlargement; below this the cord appeared to be normal. Histologic examination, made at different sections of the cord, revealed a typical gliomatous structure, which involved to a greater or less extent the medulla, and almost the entire cord. The appearance of the preparations examined, renders it probable, that the new formation of gliocells derived from the proliferation of the ependymal and peri-ependymal cells. Although the new growth involved almost the entire extent of the cord, it is only to the well-developed growth in the upper half of the cord, that the symptoms presented by the patient are to be attributed. The high temperature could hardly be accounted for by the pulmonary condition present, and was probably due to the rapid destruction of nerve-elements in the spinal cord.

Morris, Malcolm: Management of Eczema in Children. (*Am. Jour. of Med. Sciences,* Vol. cix., No. iii.)

The paper on the above subject was read before the British Medical Association by Dr. Morris, who called attention to the following points: First, Are internal remedies required in Eczema? If so, what are the indications which should guide us in their use? The author's view is, that internal medication is not required unless some constitutitional dyscrasia underlies the skin affection. In chronic eczema, unaccompanied by constitutional dyscrasia, local treatment may be relied upon entirely, when the disease is inflammatory. Antimony is most valuable. In neurotic cases, the sheet-anchor is opium. If this disagree, some other sedative may be given. If the neurotic element shows itself as depression, quinine may be combined with the opium; if the discharge is abundant, belladonna may be combined with the quinine. Phosphorous, strychnia, and arsenic are useful in selected cases, but the last must be used with caution, or harm will be done instead of good. Cod liver oil and general tonic treatment are indicated when malnutrition and anæmia are present. Iron is contra-indicated when acute inflammation is present.

Second. The influence of diet in eczema. The author does not believe that the diet has any influence, except indirectly.

Third. What are the principles on which the local treatment should be carried out? Speaking generally, every case should be treated as if it were of parasitic origin. The objects aimed at, in its local treatment are, first, to destroy micro-organisms; second, to protect the inflamed surface from the air, and further microbic invasion; third, to soothe irritation.

The principles upon which the local treatment is to be carried out are as follows:

Soothe when the inflammatory process is acute.

Stimulate when it is chronic.

In either case, keep the parts continuously under the influence of antiseptics.

Ashby, Henry: Scurvy Rickets. (*British Medical Journal*, No. 1781)

Ashby (*Practitioner*, December, 1894), criticises the view of Cheadle and Barlow, that the anæmic and hemorrhagic conditions in scurvy rickets are due to absence of fresh food, and therefore are to be regarded as true scurvy. Ashby holds, that the hemorrhagic condition is an exaggeration of the anæmia, which is always present in severe or acute rickets. He supports his view by the following arguments:

(1) In some cases of severe congenital syphilis, there is a tendency to hemorrhages, and in some cases of tuberculosis there is marked anæmia and tendency to bleed from the gums, although the patients may be taking fresh food.

(2) In twenty-five cases of marked scurvy rickets, of which details are given, several were taking raw meat-juice and fresh milk when the disease came on, and in one case of seventeen months, potatoes entered into the diet. Under these conditions, Ashby considers that the condition cannot be one of true scurvy. He proposes the name "rickets with hemorrhagic diathesis" to replace that of "scurvy rickets." He explains the frequency of cases amongst the well-to-do as compared with the poorer classes, as due to the fact that such children are always delicate and brought up with difficulty, and that such children survive and develop scurvy rickets among the better surroundings, but die of other diseases, such as diarrhœa and marasmus in the slums, before the age at which scurvy rickets appears. With regard to treatment, in addition to the usual administration of raw meat-

juice, cod liver oil, fresh milk and orange juice, Ashby considers fat to be essential in some form, and fresh air to be as important as orange juice.

Small-pox and Vaccination. (*American Journal of the Medical Sciences,* Vol. cix., No. iii.)

Dr. Joseph Priestly, in the *British Medical Journal,* gives several interesting facts regarding small-pox in an ill-vaccinated community. Among three hundred and sixty-two children, but one-fourth were vaccinated. There were three hundred and forty-seven cases of small-pox, and among them was not a single case of a vaccinated child under ten years of age. Fourteen showed forcibly the beneficial effects of vaccination extending into adult life. The average length of the stay in the hospital of the unvaccinated cases was 44.2 days, that of the vaccinated, 28.6 days, a difference of more than fifteen days. Among the vaccinated, the percentage of the severe attacks was 11.20, against 88.70 for the unvaccinated cases. In nearly two-thirds of the unvaccinated cases complications arose in the course of the disease. Of the vaccinated and the re-vaccinated less than one-fourth were complicated.

Dr. Hill, in the *British Medical Journal,* reports that of six hundred and fifty-one cases of smallpox, five hundred and sixty were in vaccinated persons, of the latter twenty-six died, a death rate of 4.6 per cent. There were sixty-three unvaccinated cases, with eighteen deaths; a death rate of 28.6 per cent.

Brown, Bedford: The Resucitation of Stillborn Infants. (*American Journal Medical Sciences,* Vol. cix., No. 274.)

During the past three or four years, in several cases of this kind, apparently under the most hopeless circumstances, when all other standard methods had failed, the author has resorted to hypodermatic injections of brandy or whisky with the most satisfactory results. The amount used is five or six drops in first one arm and then in the other, fifteen drops being the largest quantity used in a single case. If the mother has suffered alarming ante-partum hemorrhage, and the infant has been drained of blood before its birth, this method can avail nothing.

ARCHIVES OF PEDIATRICS.

VOL. XII.] JULY, 1895. [No. 7.

Original Communications.

CIRRHOSIS OF THE LIVER IN CHILDHOOD.

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in the University of Pennsylvania, Associate Pathologist to the
Philadelphia Hospital, etc., etc.

San Diego, California.

WITH MICROSCOPIC REPORT.

BY WILLIAM M. GRAY, M.D.

Microscopist Army Medical Museum, Washington, D. C.

In the present communication, it is our desire to further study the case which formed the basis of a paper on the subject of hepatic cirrhosis in children that appeared in the ARCHIVES OF PEDIATRICS, in July, 1890. We desire, also, to present the results of the post-mortem examination in this case, together with the microscopic studies, and the photo-micrographs of Dr. Gray, and more particularly to consider the etiological factors in the production of cirrhosis of the liver in childhood. The child came under my observation in June, 1888, and died in my private hospital September 24th, 1890, age 12 years and 4 months. Two months after, the clinical notes were recorded in the ARCHIVES. The disease pursued about the usual course as seen in the adult. Gastric disturbances, coated tongue and foul breath, abdominal pain, slightly augmented by pressure, occasional nose bleed, stigmata composed of collections of dilated minute venules, constipation, alternating with diarrhœa, headache, dry harsh skin, some side pain, marked jaundice, lassitude, languor, and drowsiness. Thirty days before

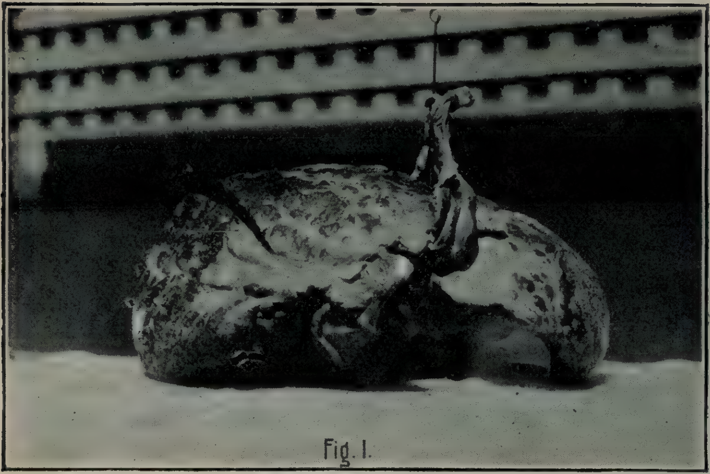

Fig. 1.

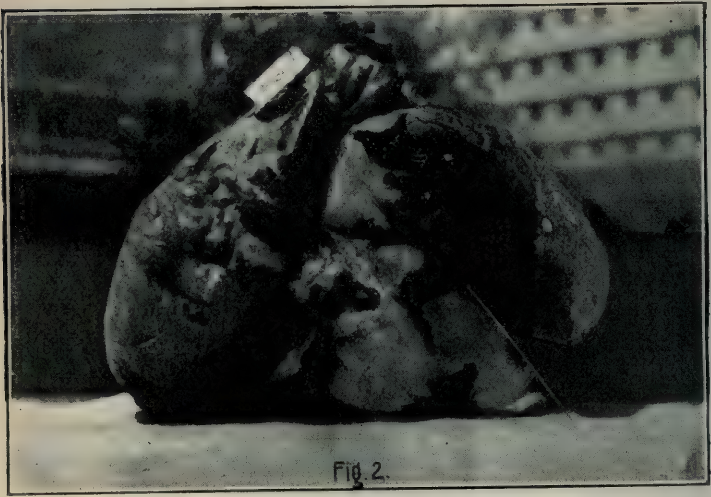

Fig. 2.

FIGURE 1. SUPERIOR SURFACE OF LIVER; PIN THROUGH SUSPENSORY LIGAMENT. ANTERIOR EDGE SHOWS REMARKABLE CONNECTIVE TISSUE FORMATION AND LOBULATION.

FIGURE 2. UNDER SURFACE OF THE LIVER, SHOWING LOBES, GALL BLADDER, AND THE EXTRAORDINARY LOBULATION OF THE PARENCHYMA.

death, ascites arose, in twenty days the belly became enormously distended with serum. The legs were œdematous, the veins of the breast and abdomen were greatly distended. The pulse was 120, respiration 30, temperature 38° C. The urine contained a small amount of albumin and a few granular tube casts. Total quantity passed in twenty-four hours, 500 c. c.

On September 13th, 1890, assisted by Dr. J. P. LeFevre, I performed paracentesis abdominis, and withdrew four and one-half litres of clear fluid. For twenty-four hours, there was a free drainage of clear serum from the puncture, the next day it decreased to almost nothing.

The child became drowsy and complained of abdominal distress and pain. The original puncture in the abdominal wall was enlarged, and a rubber drain inserted, at once 1,000 c. c. of fluid drained away. This fluid however, was no longer clear serum, but contained some pus. Slight improvement was noted in the child's general condition; the temperature remained lower, the pulse below 100, and the respiration below 20. This gain was, however, of short duration. The urine became scant, high colored, and bile stained, and was voided with difficulty. The child grew progressively weaker and weaker, hiccough became worse, the temperature subnormal, and the pulse extremely irregular. The urinary excretion was almost supressed, and finally, on the evening of the 23d, convulsions arose, which persisted until death on the 24th. These convulsions were most severe, clonic in nature, and lasted for fifteen or twenty minutes, with only short intervals between. Death occurred in one of these spasms.

Autopsy, six hours after death, assisted by Drs. LeFevre and T. A. Davis. Child much emaciated; several petechial spots over thighs, legs, and chest. Thorax: heart small; cavities dilated and contained clots; valves, normal; aorta, healthy; muscles, slightly fibroid; lungs and pleuræ, healthy. Abdomen: peritoneum, thickened, and venous channels greatly dilated. Stomach: mucous membrane thickened and slightly eschymotic; spleen presented a normal appearance, with the exception of intense congestion, and consequent increase in size.

The gross appearance of the liver is represented in the accompaning photographs, kindly taken by Dr. F. H. Mead, of San Diego. It weighs 665 grams, and is a remarkable example of atrophic cirrhosis. Its microscopic changes are most graphically and accurately presented in the photo-micrographs of Dr. Gray. The uncommon increase in inter- and intra-lobular connective tissue is well shown.

The gall bladder was comparatively normal, its mucous membrane slightly thickened, contained a small amount of bile, but no calculi.

The kidneys were large, swollen, congested, and hyperæmic. Microscopic study classes them as examples of parenchymatic nephritis, becoming transposed to a condition of interstitial nephritis.

The rectum and bladder were not diseased. The intestines were normal, with the exception of the vermiform appendix, which was gangrenous from its terminal extremity almost to its origin in the cæcum. There was, however, no loss of structure or perforation. It contained no concretions or fecal matter.

I was unable to exactly determine why this gangrenous condition existed, had the child survived a few days longer, perforation would undoubtly have occurred. The condition of the appendix may possibly be explained by recalling the anatomy of the part.

The mesentery of the appendix is derived from the inferior layer of the mesentery of the ileum, and is too short, ending usually at about the centre of the appendix, or, at most, at the junction of its middle and terminal third.

There is another structure, which Treve aptly states, is the remains of the true mesentery of the appendix. It takes its origin from that part of the ileum most remote from its mesenteric attachment, and is united with the mesentery of the appendix. This peritoneal fold does not carry any blood supply to the appendix, which as a rule,

Fig. 3.

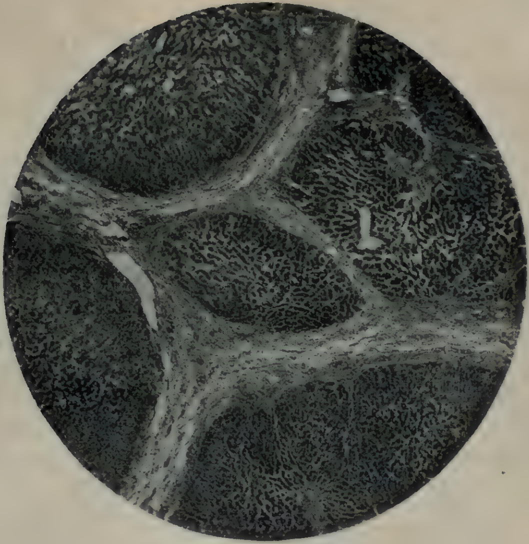

Fig. 4

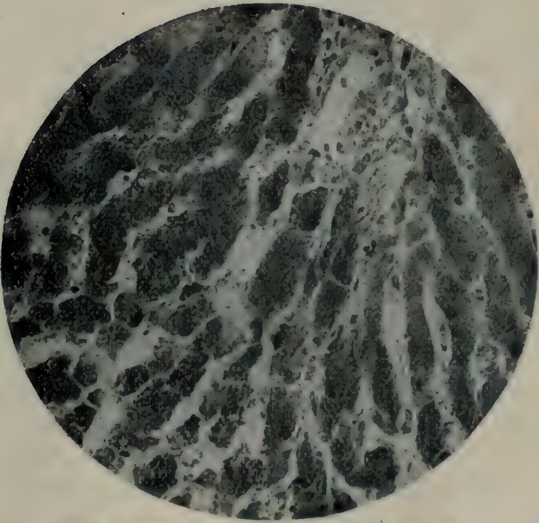

FIGURE 3. SHOWS LOBULE SURROUNDED BY THE ENORMOUSLY INCREASED INTERLOBULAR CONNECTIVE TISSUE. (x 35 DIAMETERS.)

FIGURE 4. SHOWS THE SAME LOBULE MORE HIGHLY MAGNIFIED. (x75 DIAMETERS.)

derives its blood supply from but a single vessel, a branch of the ileo-colic.

These anatomical facts, would appear then, to offer an explanation of the condition of the appendix in this case. The enormous quantity of peritoneal fluid, and the distention of the cæcum, head of the colon, or ileum, with gas, and the interruption of intestinal peristalsis from fluid pressure, would cause dragging on the already too short mesentery of the appendix. In this way, we would have a material interference with the blood supply, and per consequence, an exciting causative factor in the condition found at the post-mortem.

White (*Therap. Gaz.*, June 15, 1894), considers that the anatomical condition completely explains well-known types of appendicular disease.

It is somewhat remarkable, that life could be sustained with such an important organ as the liver in the advanced state of disease shown by the specimen. The organ was practically converted into a mass of fibrous tissue.

Since the appearance of Howard's paper and my first communication, the subject of infantile cirrhosis has received more attention, and its problems are quite well worked out, nor can the affection any longer be considered rare, as writers are now constantly recording their observations in this disease.

We will briefly review the progress since 1890. The recent writings have shown us, that the natural history of cirrhosis of the liver in childhood does not differ from the same disease in the adult. Its cause, clinical symptoms, diagnosis and prognosis are identical. Alcoholism seems to have the same relation to the disease in early life as in the cirrhosis of adolesence or advanced age.

The relation of the eruptive fevers of childhood to the production of cirrhosis, was dwelt upon in my first communication. Further study, and a careful review of the literature, prompts me to reiterate these statements, and to lay great stress upon the relation that a marked attack of any of the eruptive fevers has upon the production of the disease. This relationship was clear in the case which presents the specimen under consideration, and other writers have recorded similar observations, particularly is this the conclusion of the Thesis of Porembski, "Contribution a l'etude des Cirrhosis Hepatiques ches les Enfants." Paris, 1891.

In Stack's* twenty cases at St. Bartholomew's Hosptial, and the Hospital for Sick Children. London, occurring in children under twelve years of age, averaging five years, there was no evidence that alcohol, syphilis or rickets was either directly or indirectly the cause; but, on the other hand, seven of the cases had suffered from scarlatina. In five, the symptoms of cirrhosis were decided to have dated definitely from the attack of scarlet fever. Six cases had measles, but the relation between the causative effect of this exanthema and cirrhosis, was not as clear as in those who had scarlatina. Acute nephritis was coincident in some instances. Jollye reports two fatal cases (*Brit. Med. J.*, Apr. 23, 1892, *Am. J. Med. Sci.*, Oct., 1892,) brother and sister, aged ten and eleven, who had both previously suffered from measles. Ormerod (St. Bartholomew's Hospital Reports, Vol. xxvi, 1890,) reports a remarkable case of cirrhosis of the liver in a boy, with obscure and fatal nervous symptoms. The child was aged ten. The post-mortem showed lesions in the brain and advanced hepatic cirrhosis. Vertical sections through the brain showed at the level of the optic commisure a smal patch of softening, involving the outer layer of the left lenticular nucleus. The section, one and one half inches further forward, (pediculo-frontal), and the section behind, (through anterior border of pons the parietal section), no longer showed this softened patch. Some tiny patches of softening occurred in the upper part of the pons. No disease of the cortex cerebri or of cortex cerebelli. Ormerod refers to other cases in the literature, which presented the same peculiar and fatal nervous symptoms with post-mortem evidence of advanced hepatic cirrhosis and slight lesions in the nervous system.

The writer thinks that the Germans have presented

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* *Am. J. Med. Sci.*, Vol. civ., No. iv., p. 501.

Fig. 5.

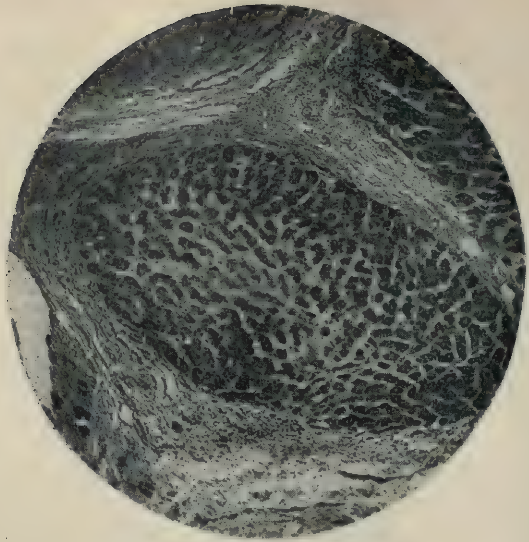

Fig. 6.

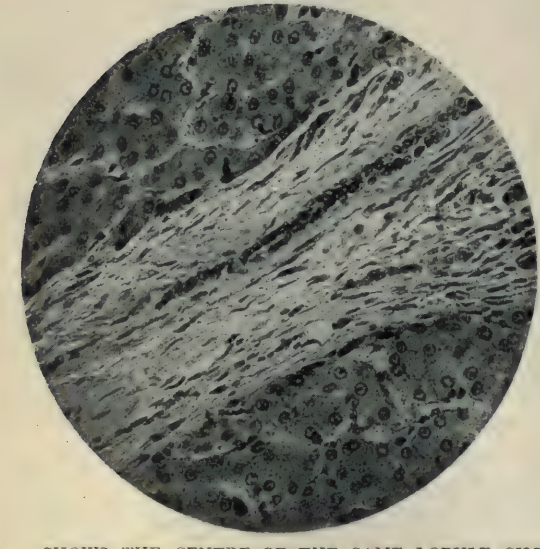

FIGURE 5. SHOWS THE CENTRE OF THE SAME LOBULE, SHOWING INCREASED INTRALOBULAR TISSUE.

FIGURE 6. SHOWS THE EDGE OF THE SAME LOBULE, SHOWING THE DENSE CHARACTER OF THE INCREASED TISSUE.

evidences, which make it probable that the softening in the neighborhood of the lenticular nuclei had some essential connection with the disease. Gowers' case of cirrhosis of the liver presented symptoms intermediate between those of chorea and tetany, but no lesion was found in the nervous system after death. Tordeus, *Jour. de Med. de Chir. et de pha. Bruxelles*, Nov. 29, 189– (have not seen the original) reports a case in a boy of nine years, in which no predisposing or exciting cause could be found.

Some late writers have considered hepatic cirrhosis as infectious in its origin. Neumann, *Deuts. Med. Zeit.*, Berlin, Mar. 23, '93 (Cohen) reports a case of congenital hepatic cirrhosis, probably dependent upon syphilis. Death occurred at four months of age. Hausemann, (*Wien. Klin. Wochenschrift*, May 8, '93,) referred to by the same reviewer, also reports a congenital case. D'Espine (*Sajou's Annual*, c. 45, Vol. 1, 1894,) records a case of cirrhosis of the liver in a boy who came under observation at the age of six years, and was observed for three years. Jaundice or albuminuria never occurred. Ascites was present for two years; repeated right-sided pleural effusions. Necropsy showed extensive fibroid changes and adhesions of peritoneum and viscera, perihepatitis, perisplenitis, enlargement of spleen. The liver exhibited evidences of an intense, interstitial, periportal hepatitis. Bouchard, in commenting on the case, combatted the idea that infantile cirrhosis was due to syphilis.

Jollye (*ibid.*) remarks that the habit of the inordinate consumption of vinegar by the two children under his care, had in his opinion, much to do with the production of the cirrhosis. The vinegar lessening gastric secretion, interfered with digestion, and allowed the formation of albuminoses and allied bodies, and by absorption into the portal system, set up a hyperplasia of the connective tissue in the liver.

Stack (*ibid.*) formulates the following conclusions:

"That alcohol, syphilis, tuberculosis and malaria, account for 50 per cent. of the cases, the other most frequent cause being probably the exanthemata and errors in diet.

"That acute interstitial hepatitis is frequently found microscopically after the infectious fevers, especially after measles and scarlet fever ; but the part played by the disease, alcohol, and diet, respectively, in those cases which afterward become examples of cirrhosis, is an open question, as is also the reason why some livers are affected with hypertrophic and others with the simple form.

"That some cases are part of a general disease, due to some poison gaining admission to the general circulation, and especially attacking the liver owing to the slow circulation in the hepatic capillaries, just as no doubt, acute yellow atrophy is a general disease, the chief pathological change found *post-mortem*, having caused it to be classified amongst the diseases of the liver."

Brown's interesting case (*Arch. Pediat.*, Vol. X., No. 1., 1893, p. 48,) in a boy aged nine years and nine months, with careful post-mortem records, seems to have been due entirely to dietetic excesses.

Ghosh (*Indian Med. Gaz.*, January, 1891; Am. J. Med. Sc., May, 1891,) in reporting cases of cirrhosis in children under two and a half years of age, that almost invariably terminated fatally in from three to twelve months, proposes as the only etiological element a faulty diet.

Osler states that in the cirrhosis of early life, excluding the alcoholic and syphilitic cases, the acute infectious diseases are probably the important antecedents.

The more recent papers of the year just closed are as follows :

Blagoveschenski, A. N. "Atrophic Cirrhosis of the Liver in a Child of Ten Years." *Trudi Obst. dietsk, Vrach.*, Mosk., 1894, 11,129.

Mirinescu. "Cirrhose Hypertrophique avec ictére Chronique Chez un Garcon de 14 Ans." *Rev. Mens. d. Mal. de l'Enf.* Paris, 1894, xii., 560–567.

Sainsbury, H. "Alcoholic Cirrhosis of Liver in a

Child; Ascites; Meningitis; Death; Necropsy." *Lancet*, London, 1894, 1, 147.

Penrose, F. "Cirrhosed Liver from a Youth Aged Sixteen" Tr. Path. Soc., Lond., 1892–3, xliv., '93.

Clarke, J. M. "Remarks on Cirrhosis of the Liver, with Especial Reference to its Occurrence in Children, and to the Mode of Death in Cirrhosis with Jaundice." *Brit. M. J.*, Lond., 1894, 1, 1407–1412.

Otitis Media of Scarlet Fever—Blaxall bases a paper in the *British Medical Journal* upon an examination of two hundred and eighty-seven cases of scarlet fever. Of these cases thirty-six suffered from otitis media. Fourteen were examined bacteriologically. The following organisms were found:

Streptococcus pyogenes	12	times.
Bacillus striatus albus	9	"
Streptococcus pyogenes albus	8	"
" " aureus	5	"
Micrococcus albus liquifaciens	3	"
Bacillus acid. lactici	2	"
" subtilis	1	"
" pyocyaneus	1	"
Tubercle bacillus	1	"
Yeasts	6	"
Sarcinæ	3	"
Moulds	4	"

The conclusions derived from these investigations are:

(1) That the organism most potent in the ætiology of otitis media of scarlet fever is the streptococcus pyogenes.

(2) That the less chance there is of contamination from the outer air through the external orifice, the more the pyogenic cocci predominate over rod forms, but that prior to perforation of the membrane the occurrence of such organisms is not precluded, since they may ascend from the mouth and air passages.

(3) That next to the streptococcus, the most important organisms are the staphylococci albus and aureus.

(4) That apparently the diplococcus pneumoniæ of Fraenkel, or the bacillus pneumoniæ of Friedländer, do not play such an important part in the otitis media of scarlet fever as in that due to other causes.—*Medical Chronicle.*

SOME PHYSIOLOGICAL FACTORS OF THE NEUROSES OF CHILDHOOD.

BY B. K. RACHFORD, M.D.,

Clinician to Children's Clinic, Medical College of Ohio, Cincinnati, Ohio.

IX.

Reflex Irritation.*

Reflex irritation is one of the most important etiological factors of the neuroses of childhood. Many able pediatrists in recent years have waged an active crusade against this propostion, which previously was thought to be one of the axioms of medical knowledge. While these men have not been able to convince the medical world that reflex irritation is an unimportant factor of neurotic disease, they have very much modified the view, which so long obtained, that reflex irritation was the all important factor in producing these diseases. In the proposition, as stated at the beginning of this chapter, I have taken position between these extreme views, and it will be the purpose of this paper, to show that the influence of reflex irritation in producing nervous diseases in childhood, has been as much underrated in recent years as it was exaggerated by earlier writers, who taught that almost every nervous disease was caused by some reflex act. It is a matter of common clinical observation that such neuroses as hysteria, incontinence of urine, night terrors, chorea, convulsions, fever and headache are etiologically related to some form of reflex irritation, and this relationship is not infrequently absolutely demonstrated, when removal of the reflex irritation cures the neurosis.

The common sights of reflex irritations, which are recognized factors of nervous diseases in children, are the genito-urinary organs, the gastro-intestinal tract, the eye, the ear, and the nose. The importance of this subject does not end with recognizing that reflex irritation from all of the above-named sights are common factors of neurotic disease, but it is of equal importance that we should recognize that, as a rule, reflex irritation acts conjointly with other factors in producing the neuroses of childhood. It is a well-known fact that reflex irritation, of apparently a severe type, may exist without producing nervous symptoms. In such instances, the centre, which is the most important part of the reflex arc, is normal, stable, and not easily excited to discharge its stored up nerve energy. It is most important, therefore, that we should recognize the fact, that the reflex irritation, which excites neurotic disease, is made potent by reason of its connection with an abnormally irritable reflex centre. In prevous chapters, we have studied the influence of heredity, sex, age, environment, and various blood conditions, in producing an increased irritability of nerve centres; and it is chiefly with the aid of these factors of neurotic disease, that reflex irritation can produce such a wide range of nervous symptoms. The study of this subject embraces, therefore, not only how each of these factors may act in producing nervous symptoms in children, but it must also inquire into the inter-dependence and relationship of these factors in producing these symptoms.

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*Read before the American Pediatric Society, Hot Springs of Virginia, May 28, 1895.

The fact that reflex irritation is commonly associated with other factors, does not in the least diminish its importance as a factor of neurotic disease, since the removal of the reflex excitant, very commonly cures the neuroses, even though the other factors remain, and since our best efforts at removal of other factors of neurotic disease, as a rule, are futile for good, as long as the reflex excitant remains to constantly excite the nerve centres. The explanation of these clinical facts is, that reflex irritation does not act simply as an excitant in discharging nerve force from irritable centres, but it also acts by keeping up the irritability of these centres, and if long continued, by producing changes in the nerve centres, recognizable under the microscope, which make these centres more irritable and more susceptible to reflex excitation.

If this be true, then, reflex irritation at once assumes a commanding position among the factors of neurotic disease in children; such a position, as in recent years, has not been accorded to it, and it is the special purpose of this chapter, to replace reflex irritation in the high position which it merits among the factors of neurotic disease in children; in that position, which it formerly occupied, and from which it has been unjustly removed.

The microscope has gradually revealed to us the fact, that all cellular activity is accompanied by definite chemical and morphological changes in the cell itself. The tired cell differs from the rested cell, not only in morphological changes, which can readily be noted in nucleus and cell protoplasm, but also in the reaction of both cell, protoplasm, and nucleus to coloring matters.

The changes which result from the functional activity of cells may be called fatigue changes, and it is evident, that the longer the cell is worked, the more marked will be these changes. It is also a physiological fact, that fatigue changes in the tired cell will disappear after a period of rest, and the cell will again be found morphologically and chemically a rested cell, but it requires a longer period of time for a cell to return to its rested condition than it does for the same cell to tire under ordinary work.

The fatigue changes, resulting from the functional activity of glandular epithelium are, as a rule, very pronounced. These changes, while not the same in all gland cells, may be noted in the shrunken condition of both nucleus and cell protoplasm, and in the changed reactions to coloring matters of both nucleus and cell protoplasm. Fatigue changes in the tired muscle cell are also shown in the shrunken and vacuolated condition of its protoplasm. And both the tired muscle cell and the tired gland cell are only restored to their rested condition by a period of prolonged rest—the period of rest required being considerably longer that the period of activity.

The nerve cell, like the gland and muscle cell, shows marked morphological and chemical fatigue changes. C. F. Hodge, in a very clear piece of work, has shown that definite changes occur in the nerve cells of the brain and spinal ganglia of certain birds and bees as a result of their normal daily activity. He compared the nerve cells of sparrows and swallows, shot in the early morning, with the nerve cells of sparrows and swallows, shot in the evening, after a day of hard flight. Experiments of this kind on birds and bees invaribly showed fatigue changes in the nerve cells tired from the day's work. Hodge also found definite changes to occur in the spinal ganglion cells of the frog, the cat, and the dog, under electrical stimulation, and these changes were very similar to the changes which he had observed to result from the normal daily activity of nerve cells.

These fatigue changes in the nerve cells, whether resulting from normal daily activity or electrical excitation, are as follows:

Nucleus was "much smaller, and had a jagged, irregular outline. It took a darker stain, and lost its reticular appearance."

Cell protoplasm "did not take stain so readily, and was much shrunken. In spinal ganglia it was vacuolated."

Hodge also observed that the nerve cell recovered much more slowly than it tired, and that the recovery of the nerve cell might be represented by a curve, quite similar to the curves obtained by Mosso and Lombard, for the muscle cell in its recovery from fatigue. He concludes that "individual nerve cells, after electrical excitation, recover if allowed to rest for a sufficient time, but the process of recovery is slow. From five hours stimulation, recovery is scarcely complete after twenty-four hours' rest."

The changes above noted in nerve cells, as resulting from electrical stimulation and normal fatigue, have a plain bearing on the study of the changes which occur in the spinal ganglion from reflex irritation, since reflex irritation can do nothing more than greatly exaggerate the functional activity of these cells, and must, therefore, result in changes within the cells similar to those above described.

Satovski, in a careful research on "Changes in Nerve Cells Due to Peripheral Irritation," has made an important advance in our knowledge of this subject. He irritated a peripheral nerve by ligature, and thereby caused a peripheral, but not a central, degeneration of the nerve. In this way, he produced a chronic reflex irritation of that portion ot the cord to which this nerve belonged, and on microscopical examination of the cord at this point, he found on the injured side, using the uninjured side for a control, many cells exhibiting great vacuolation, and shrinking of the protoplasm from the capsule. The nuclei of these cells were oval instead of round, they stained easily, and were sometimes so much shrunken that they were zigzag in outline, and left a space between the protoplasm and the nucleus of the cell.

Mrs. Ternowski, in a research on "Changes in the Spinal Cord from Stretching the Sciatic Nerve," found changes very similar to those previously noted by Satovski.

From the observations quoted, it is plainly evident that chronic reflex irritation can produce very marked changes in the nerve cells of the spinal ganglia, and that the longer and more violent this irritation is, the more pronounced will these changes be. It is also plain that a considerable length of time must be required to restore to their normal condition, cells which have been subjected to reflex irritation for months and years. It has even been noted that nerve cells, under electrical stimulation, can be so exhausted, that the nuclei will entirely disappear, and the cells be unable to recover their normal condition, even after the removal of the stimulus, which produced the change. Here we have an explanation of the oftimes slow recovery of an irritable spinal cord, after the removal of the reflex cause, which brought about the irritability. In the application of these facts to clinical medicine, we must remember that the spinal cord has but two functions, viz: conduction, and reflex action.

We must also remember, that a reflex irritation of an afferent nerve, carrying impulses to any one of the many special reflex centres of the cord, does not confine its morbid influence to that centre, but, by reason of the physiological law of "overflow of reflexes," the impulse spreads up and down the cord, producing changes in the cells of adjacent centres; and if the reflex irritation be severe and long continued, the impulses may spread throughout the cord, involving all its centres, and producing a general spinal irritability, and in this way predisposing the individual to all kinds of reflex nervous diseases.

In some recent experiments made upon rabbits, I have been enabled to demonstrate, that a chronic reflex irritation can produce a most extreme irritability of the nervous centres in the cord of this animal. In these experiments, the abdominal cavity of the rabbit was opened, and the large intestine stitched into the abdominal wound. These rabbits quickly recovered from the operation, and for a week or ten days seemed normal in every way. At this time the reflexes, which, in the normal rabbit, can scarcely be brought out at all, began to be very perceptible. In these experiments, the knee jerk, and a reflex which is produced by letting the finger slip over the anterior superior spine of the ilium were studied; and it was found that from the tenth day onward, there was an increase in the reflex excitability of the cord, as determined by an increase in the above-named reflexes. The reflex excitability of the cord continued to increase for about six weeks; after this period of time, the cord was so excitable that it was impossible to make out whether the excitability was increased or not, since a slight touch would produce a maximum reflex.

These experiments clearly show that chronic reflex irritation, unassisted by any other cause that could be made out by careful post-mortem examination, can produce in the rabbit a most extreme irritability of the spinal motor centres. The post-mortem examinations of these rabbits, one of which was killed three months after the operation, showed no evidence of peritonitis or other disease, other than the attachment of the large intestine to the abdominal wall. The spinal cord of the rabbit killed at the end of the third month was examined microscopically, a number of sections being made from the lumbar and dorsal regions. In all of these sections changes in the ganglion cell, similar to those described by Satovski, were found. The nuclei, were irregular in size and outline; many were oval and many had a jagged outline; many of the nuclei were small and had a shrunken appearance; and all of them took the stain more deeply than does the rested (normal) nucleus. The protoplasm of the cells did not take the stain as it normally does, and in many instances it took the stain so faintly, that the outline of the cells could not be made out. In some instances, only the small, deep-stained nuclei were visible.

In the above observations, we have not only a physiological, but also a morphological explanation, of how and why a chronic reflex excitation may be an important factor in producing a general spinal irritability, and we have also a sufficient explanation of the fact that the removal of the reflex cause, which has been acting for years in producing spinal irritability, may not at once be followed by the cure of the spinal irritability, and that it may even require years of comparative rest for the irritable spinal centres to become stable (normal), even after the removal of the reflex cause which produced the irritability of these centres; and these observations also justify the belief that reflex irritations, acute and chronic, are among the most important causes of neurotic disease in children.

In the study of the influence of reflex causes in producing the neuroses of childhood, one important question must be answered, viz: why is it, that chronic reflex irritation is so much more important, as a factor, in producing nervous diseases in children, and in girls, than it is in man? The oculist will testify that eye strain is a much more potent factor in producing headache, chorea, and general nervous irritability in children, and in young women, than it is in men. The surgeon will testify that diseases of the genito-urinary apparatus, which produce the most profound nervous symptoms in women and children, have little or no such influence in men. The physician will testify that irritation from disease of, or foreign bodies in, the intestinal tract will produce convulsive and other nervous disorders in children, while the same conditions have little influence in producing nervous symptoms in man. The gynecologist is prone to believe that disease of the female generative organs is the most important of all the reflex causes of nervous disease; and every clinician has observed the predisposition to nervous disease, which accompanies the growth and functional development of these organs. In fact every department of medical science lends testimony to the fact, that age and sex are among the most important of the predisposing factors, which assist reflex irritation in producing neurotic disease; and the reasons for the potency of reflex causes in producing neurotic disease in children and girls, is not altogether obscure.

The following facts may be noted.

1. *In children*, (*a*) Reflex causes are more frequent than in adults, (such for example as uncorrected eye-strain, adherent prepuce, balinitis, etc.). (*b*) The nervous system of the child is more irritable and unstable by reason of its incomplete functional development. (*c*) The inhibitory control of higher nerve centres on spinal reflex movement is feebly developed in the child. (*d*) Blood changes are much more common allies of reflex disturbances in producing nervous disease in children than they are in adults.

2. *In girls*, (*a*) Reflex causes are very much more frequent than in boys or in female adults, (the approach of puberty, with the functional development of ovaries and uterus, is a source of constant reflex disturbance; after the full functional development of these organs, the reflex excitation is intermittent and confined to a period just before and during a menstrual period). (*b*) Inhibitory

control of the spinal motor centres more readily gives way in young girls than in boys of the same age. (*c*) The social conditions and habits of life of the young girl predispose her to nervous disease. (*d*) Blood changes, which produce nervous irritability, are very much more common in girls than in boys.

The above are some of the factors which assist reflex cause in producing neurotic disease in children, and in young girls, and which have little influence in producing disease in male adults. In these observations, we have an answer to the question: Why does reflex irritation produce nervous disease more readily in the child and young girl, than it does in the male adult?

DISCUSSION.

Dr. T. M. Rotch: There is no doubt that we need to have our attention called more closely to the reflex conditions that arise in childhood. If we were more careful in regarding these symptoms, we might avert much suffering that possibly now arises from erroneous diagnoses. This paper could be discussed at any length, but the subject is too broad to enter upon this morning.

Dr. L. Emmett Holt: It seems to me that the constitutional symptoms associated with rickets should be mentioned. Given a rachitic child, the condition is such that a very small matter may give rise to marked disturbances. Such small disturbances as would not affect a healthy child will markedly affect rachitic children.

Dr. B. K. Rachford: I covered that part of the subject in a previous paper.

Dr. A. Jacobi: I look upon this paper as either an epilogue or prologue of a larger work, as the author did not take up rickets or any other special disease or condition. As far as rickets is concerned, the symptoms are not in the majority of cases the results of reflexes, but are due to an abnormal condition of the brain and meninges from an early period. In a large number of cases the brain suffers first. We have to deal with a disease of the nerve centres and not with reflex symptoms, therefore, I do not consider that example a very good one.

THE IMMUNIZING EFFECTS OF ANTITOXIN.*

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Before describing the results obtained from 438 immunizing injections of antitoxin at the Children's Hospital, I will briefly explain the reasons which have rendered such an extensive use of the serum necessary.

The policy of the institution, has always been to decline to admit cases of such diseases as are generally regarded as infectious; and the building originally included but two small rooms for the isolation of such cases as might appear among the patients in the house. After a time, (as might be naturally expected in any large congregation of children), endemics occurred, and larger, but (in the light of recently acquired experience) insufficient quarters were provided.

During the year 1894, cases of diphtheria occurred so frequently as to necessitate the closing of the hospital, and disinfection of the wards, on three separate occasions; to the great inconvenience of all concerned, and with serious detriment to the usefulness of the institution.

It was thought at first, that the infection was introduced by the parents or friends of the patients; and blouses and disinfectant washes for the faces and hands of all visitors were prescribed. But in spite of these precautions, fresh outbreaks occurred, and we were reluctantly forced to the conclusion that the Klebs Loeffler bacillus had installed itself as a permanent and most unwelcome guest within our walls, and stood in no need of an introduction.

Furthermore, we convinced ourselves that the chief source of trouble was confined to one ward, where grave defects of ventilation were discovered. Some time elapsed before this last conclusion was reached; for while cases of diphtheria were more frequent in this ward than elsewhere, the fact that a majority of the children were in the habit of meeting in the play-room, had led to such a distribution of the infection as to give rise to cases in all parts of the hospital. The type which the disease assumed was seldom frank; children with coryza or slight tonsillitis and scarcely any constitutional symptoms, would perhaps fatally infect others, and in many instances repeated bacteriological examinations of the secretions alone showed when the trouble began and ended—no membrane or other clinical evidence of diphtheria being present at any time.

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* Read before the American Pediatric Society, Hot Springs of Virginia, May 27, 1895.

January 13th, 1895, there were nine cases in the infectious wards, four or five of which had been transferred from the house within forty-eight hours.

The question of closing the hospital for the fourth time was discussed, and it was decided to first try immunization with antitoxin, in the hope that this course might enable us to maintain open doors and go on with our work. The staff was so kind as to give me *carte blanche*, so far as the diphtheria was concerned, and within thirty-six hours, thirty-nine patients who remained in the house, and three nurses who were on duty in the contagious wards, received each an injection of 5 c.c. of the serum prepared at the Pasteur Institute of New York, according to the formula of Roux.

The apparent result of this first attempt was to instantly arrest any further spread of the disease. Patients in the contagious wards were disinfected and returned to the house as soon as negative reports of the cultures of two specimens, taken forty-eight hours apart, were received from the bacteriological laboratory of the Harvard Medical School. No patients were admitted with any suspicious symptoms in their noses or throats; and all new-comers received an injection of 5 c.c. on entrance. Specimens were obtained frequently from all patients, and reports of the cultures were all negative until Jan. 29th, when a boy who had reacted perfectly well to an immunizing dose, was found guilty of harboring the Klebs Loeffler bacillus, and was at once transferred to the contagious wards The specimen from which this positive culture was obtained, was taken sixteen days after immunization; and while there was no certainty that the bacillus had not been present for an indefinite time in this particular case, (through an oversight, no previous culture having been made) it was thought best to inject antitoxin again in all cases which had not been immunized within ten days. Cultures were now made at the Bacteriological Laboratory of the Harvard Medical School, of specimens from every nose and throat in the house, and negative reports obtained in every case but one—that of a boy who had been returned to the house from the infectious wards after two favorable bacteriological examinations.

A rule was now made that all new patients should be injected in the bath-room before being allowed to enter the wards for the first time, and the dose of antitoxin was increased to 10 c.c. for children ten years of age or over. I do not believe that the injections have been omitted or deferred a dozen times on account of the condition of any childs' health, and I have seen but one instance in which danger was suggested by the use of the serum—a case which I shall refer to later on. The mere inspection of noses and throats was soon found to be a very slight safeguard against the introduction of the bacillus; for children with apparently normal mucous membranes were frequently discovered to have bacteriological diphtheria a day or two after entering the hospital, and emergency cases were often found to be in the same plight. One of the latter developed diphtheritic membrane; and while all this went to prove the reliability of antitoxin as an immunizing agent, bitter experience had rendered us timid, and the rules for admission were amended so far as to exclude all applicants until they had been reported as free from the bacillus, excepting cases of the greatest urgency. Meanwhile, all patients found guilty of secreting (and perhaps excreting) the Klebs Loeffler were transferred to the infectious wards, there to remain until negative reports of their cultures should set them free.

No signs of the enemy were present again in any patient whose mucous membranes were free at the start, until February 15th, when a boy who had been twice immunized—the second time on January 29th—and whose cultures had always given negative results, was found to be infected. Injections were at once given in all cases which had not been immunized within two weeks, and the rule established, to repeat them every fortnight.

March 12th, a patient who through an oversight had been given no antitoxin since February 16th, was found to have the bacillus; but we had now become quite accustomed to its presence, and so long as it had not been detected in any child who had begun with a clean record, in a shorter space of time than seventeen days after immunization, we felt pretty safe so long as the injections were regularly given every two weeks. The next day, however, a positive culture was obtained in the case of a patient who had been injected February 28th. This eclipsed any previous records, and showed that fourteen days could not be surely counted on, so the period allowed to intervene between the immunizations was shortened to thirteen days. Meanwhile an estimate of the applicants for admission whose cultures were positive, showed that over 20 per cent. had the bacillus in their throats or noses. Emergency cases came thick and fast (emergency is an elastic term from a surgical standpoint) and when the observation rooms in which such cases were kept, (pending reports from the bacteriological laboratory) happened to be full, they went into the common wards. Some of these proved to have bacteriological diphtheria, and one developed clinical evidence of the disease. There is not the slightest doubt that many patients in the house were thoroughly exposed, aside from the infection present in the building itself. Our contagious wards were now full, and the question of continuing to admit patients, and allowing such patients as might present bacteriological but no clinical evidence of the disease to remain in the open wards (or even to be transferred to them from the contagious quarters) was discussed. I thought at the time, and I still think, that this could have been done with safety so long as immunization was regularly kept up. There had been but few days during the past month when the wards had been free from the bacillus either alone, or as a companion to membrane. A large majority of the staff agreed with me; but we refrained from pursuing a course which might injure the hospital by giving rise to distorted rumors.

So a vote was passed to the effect that every patient with the bacillus present, whose culture had not been tested by injecting a guinea pig, should remain in the infectious wards, and admissions to the hospital suspended; for if measles or scarlet fever broke out among the children, we should find ourselves badly crippled. Everything considered, I am sure that the staff is entitled to the credit of showing a considerable degree of deference to the somewhat freely expressed opinion of outsiders, who know but little about the actual situation. Fortunately the bacilliary tide began to ebb at this time, and we were spared the ginuea pig test, which often consumes a fortnights time, and may lead to no really definite conclusion in the end.

Things now went along smoothly until March 25th, when an unmistakable break-down occurred in a child who had been antitoxined on the 10th, and again (by mistake) on the 16th. Negative cultures had been obtained on the 4th and 19th, but the girl had perfectly well marked clinical diphtheria, and the diagnosis was confirmed by bacteriological examination. Within twenty-four hours bacilli, but no membrane, were found in two other cases which had been immunized on the 16th. But in spite of these exceptional cases (occurring as they did nine and ten days respectively after being injected) it was not thought best to shorten the interval between the immunizations, as I had good reasons for doubting the reliability of the serum used in these instances. April 4th, but two patients remained in the infectious wards, and as the service was becoming less active we no longer made surgical patients wait for bacteriological examinations before admitting them to the house. Two or three proved to be infected (inasmuch as the bacillus was present in their throat, and such cases must be regarded as infectious, no matter how robust their general health may be, until their cultures have been proved benign by the guinea pig test) and were allowed to remain in an open ward. The epidemic was on the wane, the infectious wards were quite empty, and we did not care to reopen them. In short, we did now what we might have safely done weeks before, and for better reasons. No bad results followed this course, and I am sorry that it was not pursued at an earlier date. Children who had the bacillus but no symptoms requiring special care, might far better have remained in the house and passed their time in being cured of the affections they entered the hospital for originally, than have gone to the infectious wards and increased the work of the staff and nurses. Certainly nobody who is familiar with the conduct of children in hospitals—their close intimacies, the manner in which toys are used by all—can believe that the risk of infection would have been materially increased over what already existed if they had been allowed to remain.

An analysis of all the cases, shows that of a total of 438 immunizing injections given between Jan. 13th and May 13th, 109 were of Gibier's serum; 104 of Behring's, 74 of Aronsons, and 151 of the antitoxin prepared by the Mass. State Board of Health. The largest number administered to one child was seven. Many of these patients were under treatment for acute diseases at the time of injection: croupous and broncho-pneumonia, grippe, tubercular peritonitis, empyema, typhoid, or such surgical troubles as naturally find their way to a children's hospital. No special symptoms were noted as produced by the serum with regard to the existent diseases at the time of injection excepting in one or two suppurative hip cases, in which there was a temporary improvement in the appetite and general condition. In a few cases of desperate illness the antitoxin was omitted, or postponed until the patient's condition improved, but as a rule all fared alike. I have failed to observe any dangerous symptoms arise from immunization excepting one case—A boy, æt. two, with leucocytosis and a large spleen, upon whom two preceding doses had produced no ill effect, had a temperature of 105.4 ° F. and considerable œdema about the point of injection (given in the abdominal wall in this instance), and certainly appeared very sick. Cold baths and brandy soon made him better, however, much to my relief. Of course the results of an analysis of our cases are by no means claimed to be conclusive. They are, however, sufficiently well based to permit their being regarded as suggestive. As a rule, the temperature goes up less than a degree a few hours after immunization, and in 75 per cent. of all cases this is all there is to be seen. Erythema around the point of injection occurred in twenty-three cases. In four it was very extensive, and closely resembled erysipelas—in one instance the child was isolated. The average duration of this symptom is three days; in some cases it lasts only a few hours. It usually appears on the first day after antitoxin, and never later than the eighth. Urticaria occurred twenty-eight times. The frequency, severity, time of appearance, and duration of this symptom varies greatly with the brand of serum employed. That of Gibier (Pasteur Institute of New York), produced it in 22 per cent. on the (average) seventh day, and lasting (an average of) two and a half days. Behring's caused it in but one case, appearing on the eighth day and lasting three days. Aronson's gave rise to no urticaria. The serum of the Mass. State Board of Health produced in about 4½ per cent. an eruption appearing on the (average) second day, and disappearing in a day and a half. This serum at present very rarely gives rise to anything cutaneous, although at first urticaria was of pretty common occurence. In three instances the erythema was papular, and very closely resembled measles. In two instances an eruption like scarlet fever was present. Occasionally a child whose skin remained clear after the first or second or third immunization, broke out with an erythema, or an urticaria after a subsequent injection. The same brand of serum may produce an urticaria, an erythema, or no skin eruption whatever in the same subject, as proved in more than one instance where repeated injections were given. Pain (at times intense) was noticed about the point of injection in sixteen; œdema in seven; axillary or inguinal glands enlarged in three; general malaise (in one instance a mild delirium) in three. Pain in the articulations in less than 1 per cent. Nausea, with or without vomiting in 2 per cent. Diarrhœa (emphemeral) in less than 3 per cent. Increased frequency of micturition was noted in rare instances. The urine of eighty-two children was very carefully examined with reference to the effects of antitoxin on the kidneys, and the result of 540 examinations may be briefly stated as follows: In 20 per cent. no change whatever was detected. Of the remaining 80 per cent. those which had been free from albumin previous to immunization, showed a slight trace—in most instances the slightest possible amount, which could be detected only when placed in front of a dark back-ground. This within 24 or 48 hours after injection. In cases where albumin had been present before the use of antitoxin, there was a very slight increase of the amount. In no case was there any diminution in the amount passed, or any evidence of failure to eliminate properly. Repeated microscopic examinations revealed nothing more than an insignificant amount of renal irritation in any case, and when the albuminuria was produced by antitoxin, it disappeared in a period varying from two or three days to a fortnight.

With regard to the protection afforded by antitoxin, our experience has tended to show that the serum when fresh, can be relied upon to immunize against anything resembling clinical diphtheria thirteen days, and very probably for a longer space of time. Morover, in no instance was the bacillus detected in the nose or throat of any child who started with a clear record in a shorter space of time than that just mentioned. This last point (if eventually established) is of practical importance as showing that an immunized child is not only safe from diphtheria, but is also safe as concerns others for a definite length of time. I am by no means sure that daily examinations of cultures from every case might not have shown the fallacy of the theory; but the fact that quite numerous examinations were made, with the results described, certainly deserves mention. In the cases which broke down in eight and ten days after being immunized, the serum used had become decomposed. The color differed from that usually presented, but so slightly at the time of injection that it was used without hesitation. Forty-eight hours later it was of the color of milk.

Regarding the use of antitoxin for curative purposes, our experience, while decidedly favorable, has been too slight to warrant the expression of an opinion. Statistics at the Children's Hospital, if made up from the standpoint that the mere presence of the bacillus in the nose or throat constitutes diphtheria, would justify the extremely favorable and entirely fallacious statement, that our mortality has been less than 3 per cent. For of thirty-four patients who have been inmates of the infectious wards, only one died; and all of them received antitoxin—the great majority, however, never more than one small injection, for the purpose of immunization upon entrance, before the reports of their cultures had been obtained. Assuredly one might as well claim, that the existence of the pneumococcus in the saliva implies the presence of pneumonia, as to call all cases which have the Klebs Loeffler bacillus, diphtheria. Equally absurd is it to treat such cases with antitoxin, unless some clinical evidence of the disease is present. I have convinced myself that full doses of the serum has no influence on the mere presence of the bacillus after it has once obtained a foothold. The more ardent supporters of the treatment, will greatly endanger its reputation if they present claims based on statistics such as I have described. On the other hand, I do not doubt that equally enthusiastic opponents of antitoxin will bring forward abundant proof that it does no good whatever. I can well remember something of the kind being done in the case of salicylic acid, and kindred preparations, by conscientious men, who showed by apparently flawless statistics, that cases of acute rheumatism did better under the old treatment by alkalies; but the remedies whose merits they denied, have stood the test of time wonderfully well, and if taken away from us to-day would be badly missed.

Results of the serum treatment, if they are to inspire confidence, must be based upon such cases as are clinically diphtheria, and the diagnosis of which is confirmed by bacteriological examination. Care must be taken to exclude all cases in which a membrane, which to all appearances is identical with that of diphtheria is present, but which is due to the work of other germs. Instances of this sort are far commoner than was formerly suspected—I have observed four (two at the hospital and two in private practice) during the past six months.

In the present state of our knowledge, the Klebs Loeffler bacillus may be said to resemble an idle but extremely competent workman, who under certain unknown conditions may suddenly accomplish a wonderful task. He gives no warning of his intentions, and does not trouble himself to put on working clothes—at least none of a sort which can be recognized under the microscope.

Even such cultures as have every appearance of virulence may prove to be benign when tested, and when they look doubtful may promptly kill the injected guinea pig. Every active diphtheritic germ is undoubtedly a Klebs Loeffler, but every Klebs Loeffler is by no means an active diphtheritic germ. On the contrary, it does not, as a rule, harm those who afford it shelter. Of thirty-four patients who have passed through our infectious wards at the Children's Hospital during the past six months, but seven have had anything resembling what used to be called diphtheria before the birth of the bacillus was announced in the journals, and two of these cases were caused by other germs. But I cannot doubt, that the bacteriologists who have given us so much of inestimable value during the past few years, will before long, extricate us from the dilemma caused by our uncertainty of the sanitary status of a person who has only bacteriological diphtheria. Until this knowledge is vouchsafed us, we must continue to regard such a one as a dangerously indefinite quantity; and in an institution like the Children's Hospital, this implies the absolute rejection of a large number of cases, and the disaffection of many others, who cannot be admitted until reports of their cultures have been obtained; for after such alterations shall have been effected during the coming summer as will render the building safe, and immunization is no longer a routine, no case can be permitted to enter which is open to suspicion of harboring the bacillus.

Another thing: Are we justified in admitting a child on the strength of a single negative report? As to the reliability of these reports, there are defects in the present method of obtaining specimens for bacteriological examination, (and very probably in any possible method) which render occasional errors unavoidable. I do not wish to be understood as questioning the skill and accuracy of the gentlemen at the Bacteriological Laboratory who make the cultures. If there are no bacilli in the specimens handed in to them, we cannot reasonably expect positive reports; and I merely state an obvious fact when I say, that the wire used for obtaining specimens, may be justly compared with a hook which is lowered into a dark pool in the hope of jigging fish. If the fish are plenty, there is a strong probability of success—if scarce, the chances are fewer. And whether they are plenty or scarce, the element of luck must be taken into account. Of course, if membrane is present and the wire pushed under the outer edge, there is but little probability of failure.

To arrive at an estimate of the frequency of errors due to the uncertainty of bringing away bacilli on the wire when they are present, I have taken the bacteriological reports concerning patients in the infectious wards, from whom specimens were examined at short intervals, and called such negative reports erroneous as are immediately preceded and followed by positive cultures. Of two hundred and fifty-three reports, twenty-six were incorrect—a little more than 10 per cent. Under these circumstances I think two negative reports of specimens taken twenty-four hours apart should be obtained—nor can we then feel absolutely safe.

Some of the patients in the infectious wards were very slow in getting rid of their bacilli. One case was lodged and fed at the expense of the hospital for two months, for the sole reason that we failed to obtain two negative reports in succession. He was in robust health, and a particularly noisy and troublesome boy. Finally he was discharged, much to the relief of all concerned.

Various means were tried in cases of that kind to hasten the departure of the bacillus. Good results were finally obtained by atomizing strained lemon juice into the noses and throats six times per diem. Cases which had resisted equally frequent applications of peroxide of hydrogen yielded promptly to this treatment. It is not a pleasant procedure. Children do not like it—but neither does the bacillus. At first it occasions considerable irritation about the nostrils and upper lip; but tolerance is soon established, and the end justifies the means. Since finishing this paper (May 13th) a sufficient number of injections of antitoxin have been given at the Children's Hospital, to bring the total close to five hundred, and with no fresh evidence to alter the views which I have expressed. I think that the fact that we have not had a single abscess resulting from so many injections, speaks well for the careful attention to cleanliness on the part of the internes of the hospital whose good and painstaking work deserves mention.

The Treatment of Ocular Blennorrhœa in the Newborn was the subject of a paper by Dr. W. F. Mittendorf, of New York, who said that this disease was the cause of more blindness than any other disease. In spite of various preventive measures, the disease had not diminished to any considerable extent. A simple plan of treatment was much to be desired. It should be preventive and curative. Thoroughly antiseptic midwifery was a prerequisite, but outside of hospitals this was not always possible. Cédé's method of treatment was most effective and had saved thousands of eyes. At the Sloane Maternity this method was in use, and in four thousand three hundred deliveries blennorrhœa had never occurred. In three hundred and fifty confinements at Charity Hospital, Blackwell's Island, there had been but one case, and in that one Crédé's method had been omitted. The disease was especially common with the children of primiparæ, and was usually traceable to gonorrhœa in the man. When the disease was actually present, ideal treatment would call for constant attention with two nurses. The eversion of the eyelids, especially the upper one, where the disease was principally situated, was difficult and might be dangerous to the eyes of the attendant as well as to those of the child. The author's suggestion was to combine a drachm of boric acid with nine drachms of vaseline, draw down the lower lid, and with a feather or brush gently smear the lid with the ointment. This would be quickly transferred to the entire conjunctival surface. This should be repeated every five minutes, then every ten minutes, finally every two or three hours, until a cure resulted. In cases in which the secretion was already purulent, when the case was first seen, one or two drops of a one per cent. solution of nitrate of silver should be instilled into the upper conjunctival sac, and then a stronger solution if necessary. If the cornea resembled a piece of opaque glass the disease was in its worst form, and the sight would be lost. If there were only small patches of corneal infiltration, atropine should be employed. If it was too late, and perforation occurred, eserine should be instilled.—*New York Medical Journal.*

PERSONAL EXPERIENCE WITH DIPHTHERIA ANTITOXIN INJECTIONS.*

BY AUGUSTUS CAILLÉ, M.D.,

New York.

My experience in the management of diphtheria and croup extends over a period of eighteen years, with abundant opportunity for observation and study; and, as a result thereof, I have come to look upon diphtheria as one of the most easily preventable of infectious diseases, with decidedly unsatisfactory features as regards its treatment. Mild local disinfection and judicious stimulation have, in my hands, given better results in counteracting diphtheritic inflammation and sepsis than the routine administration of various drugs, although I am quite willing to acknowledge that Iron, Potassium Chlorate, Mercury, etc., are administered upon rational indication, and frequently with ultimate good results.

It was with profound interest that I hailed the advent of an alleged specific treatment for diphtheria; and being fortunate in obtaining from abroad an early supply of the antitoxin, I have been able thus far to observe its action in forty-one cases of Klebs-Loeffler diphtheria, of which seven cases have had a fatal termination. These figures are given simply as a matter of fact, and not as a matter of statistics upon which far-reaching conclusions can or should be based.

The causes of death in the fatal cases were the usual ones: Sepsis with heart failure, broncho-pneumonia, acute nephritis, and downward extension of pseudo-membranes. Two of the seven were moribund at the time of injection; one boy, nine years old, died ten days after the injection, with pronounced nephritis, anuria and heart failure; one child, eleven months old, with diphtheritic croup, died a few hours after injecting and tubing, and three others died from broncho-pneumonia and sepsis, without appreciable manifestations of specific curative action on the part of antitoxin.

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* Read before the American Pediatric Society at its Seventh Annual Meeting, at the Virginia Hot Springs, May 27, 1895.

Of the thirty-four cases ending in complete recovery, thirty-two were treated with Behring's or Aronson's serum, two with serum from the Gibier Institute, New York.

In the majority of cases, one injection (600 units) was given; in one-third of the cases, two and three injections were administered. Judicious stimulation was carried out in all cases, and naso-pharyngeal irrigation was practiced in all cases, with salt water or mercuric bi-chloride 1-5000.

I will not take up the time of this meeting with a detailed history of these cases, but simply pick out a few to illustrate what I look upon as specific curative action of diphtheria antitoxin.

(*a*) In a child eighteen months old, afflicted with adenoid vegetations and very large tonsils, the nose, pharynx, tonsils, and uvula were the seat of diphtheria. There was also glandular infiltration, high fever, stupor, etc. Two injections of antitoxin were administered, the progress of the disease was arrested promptly, and the child was quite well after forty-eight hours. The Klebs-Loeffler bacilli were still present three weeks after clinical recovery.

(*b*) A physician's child, nine months old, with pharyngeal diphtheria (mixed infection), recovered very promptly after one injection of Behring's serum. After five days ot normal temperature, slight fever and urticaria were noticed, which persisted for a short time only. Subsequently, a retro-pharyngeal abscess developed, which healed after incision. In my experience, cases of true diphtheria in children at the above age are usually fatal.

(*c*) A girl of five years, with scarlet fever and pharyngeal diphtheria (mixed infection) received a full dose of Behring's serum, and showed no clinical evidence of diphtheria on the day following the injection. She was subsequently in bed for two months and very ill with nephritis and suppuration in various parts of the body, and would, in all probability, not have recovered if the diphtheritic process had lasted for any length of time.

The most convincing cases as to the specific action of antitoxin are, in my estimation, cases of diphtheria with "croup." I have seen four such cases recover after antitoxin without operative interference. These children were one and one-half, three and one-half, four, and five years of age. They were seen in consultation with experienced colleagues, the antitoxin injections were made in the evening for urgent stenosis, as a dernier resort before operative interference, which was agreed upon for the following morning, but which became unnecessary, owing to marked improvement in breathing.

Every experienced practitioner has seen cases of visible diphtheria, with croup, stop short of complete stenosis, and gradually get well without mechanical interference having been resorted to; but it will be admitted by the best observers that such recoveries are rare—moreover, such recovery is always slow. Such children are a source of anxiety for a number of days; membranes are expelled, improvement is followed again by a renewal of stenotic breathing, and so on for several days. In the cases here reported, the improvement was marked and permanent from eight to twelve hours after the first administration of specific treatment.

Serious ill effects from antitoxin have not been observed by me.

I have seen urticaria, erythema, and painful and swollen joints, with fever, develop in children from three to seven days after such treatment. Such manifestations were mild and disappeared without retarding convalescence. In a number of instances, albuminuria was present, but no conclusions can be drawn therefrom. Children in contact with diphtheria who were treated with an immunizing dose of antitoxin did not take sick.

Three exposed children of one family who received no prophylactic naso-pharyngeal irrigation, and no immunizing injection, all took sick with true diphtheria, and all recovered after antitoxin therapy. These cases will always be fresh in my memory, from the fact that they had been ordered by the health officers to remain in the sick room for many weeks after recovery from a clinical standpoint, and were deprived of the stimulating effects of fresh air and sunshine for a number of weeks, until swab cultures no longer revealed the presence of diphtheria bacilli.

This restriction is, in my estimation, of no practical value as regards diphtheria in densely populated districts, and I take this opportunity of publicly protesting against the enforcement of such measures by the sanitary authorities.

A great deal has been said pro and contra regarding the specific curative action of the diphtheria antitoxin serum. In adjusting the merits and demerits of a new treatment of such colossal importance to mankind, praise and censure are apt to fall wide of the mark. To those who, from insufficient data, loudly proclaim that they do not believe in BEHRING'S discovery, I would remark that we have before us for investigation no new theory of sudden inspiration, but the result of careful, patient, and painstaking biological research, extending over many years, undertaken by those best qualified to do the work.

Our clinical experience has so far upheld the claim made for the antitoxin of diphtheria as to its specific and curative powers, for a reduction of the mortality from diphtheria is conceded by the vast majority of unbiased and competent observers.

We have in mercury, quinna, and the salicylates specifics of great value, but no one will be rash enough to claim for these drugs a positive curative action in every instance in which they are employed.

A specific for diphtheria or any other infectious disease, may fail in cases of so-termed individual idiosyncrasy; it may be powerless in far advanced dissolution from an intense primary disease, or from severe complicating conditions, and still it may be a wonderful specific, with power to heal and power to cure.

In conclusion, I would state, as regards its application, that it is indicated in visible diphtheria and true croup in full doses. Also in scarlet fever and measles in curative doses, from the fact that diphtheria is a frequent complication in such diseases, and immunizing injections are indicated in all exposed children; and taking into consideration the possibility of ill effects from blood serum, it would be wise to use only the strongest preparations containing the largest number of antitoxin units in the smallest quantity of serum.

It has been claimed by some physicians that intense nephritis, multiple abscesses, septic pneumonias and sudden cardiac failure, have been directly caused by antitoxin administration, and that this agent, therefore, is to be condemned. No proof has been advanced to warrant such an opinion. Ever since diphtheria has been a subject for discussion, clinical experience has taught us that the most intense complications frequently follow mild clinical manifestations of diphtheria. Perhaps at some future time, we may be able to isolate the various antitoxines, in which event their administration would be possible without the serum medium.

753 MADISON AVENUE. NEW YORK.

THE USE OF ANTITOXIN FOR IMMUNIZATION DURING EPIDEMICS OF DIPHTHERIA IN TWO INSTITUTIONS.*

BY L. EMMETT HOLT, M.D.

Attending Physician to the Babies' and the Nursery and Childs' Hospital, Consulting Physician to the New York Infant Asylum.

From January 18 to April 18, 1895, there occurred in the Nursery and Child's Hospital,† New York, a total of forty-six cases of diphtheria. Thirty of these had pseudomembrane in the throat; the remainder affected the nose only. In all these the presence of the Klebs-Loeffler bacilli was demonstrated by cultures. These cases had not been confined to one building or ward, but had been scattered throughout the institution. From the first of April, the number of new cases was on the increase, and during the eighteen days preceding the injections, fifteen cases occurred.

On April 18th, one hundred and ten children were injected with the serum obtained from the Board of Health, and eight days later, twenty-six children. In the first group were included all the children in the wards where diphtheria had recently occurred. In the second group were those who had not been so recently exposed. It was impossible to get enough serum on the first date to make all the injections. The injections were given to all the children in the institution except thirty-two who had recently had diphtheria, and a group of about twenty infants under two weeks of age. Of the cases immunized, the following table gives the age, number, and the antitoxin administered:

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*Read before the American Pediatric Society at its Seventh Annual Meeting, at the Virginia Hot Springs, May 27, 1895.

† I am indebted for this report to my colleague, Dr. A. M. Thomas, during whose service the injections were made.

Age.	Number.	Antitoxin Units.
3 to 4 weeks	7	50
2 months	12	50 to 75
3 to 6 months	36	100
7 months to 1 year	22	150
2 to 4 years	59	200

In children who had been previously well, and in whom temperature observations were valuable, there were four whose temperature rose during the first eight hours to 103° F.; in seventeen there was a temperature of 102° F.; in thirty-two, a temperature of 101° F., and in seventeen a temperature of 100° F. Thus sixty-nine had a temperature reaction. The maximum was reached in most cases in from six to eight hours after the injections, but at the end of twenty-four hours, it had in all instances fallen virtually to normal.

During the night following the injections, there was crying, restlessness, and sleeplessness, all of which symptoms were much more severe in the younger infants and in those who were feeble. Many refused food altogether for twelve hours, and cried nearly all the time.

In fifteen of the cases presenting the most marked symptoms, the urine was examined. About half of these showed a faint trace of albumen for one or two days. After this time the urine was normal. There were no general symptoms pointing to disease of the kidneys.

In seven cases, on the eighth or ninth day after the injections, there was noted a more or less profuse erythematous eruption, occurring in blotches about the size of a silver dollar. This was not associated with any rise of temperature, and did not show a disposition to localize in any special area. In one case there was a profuse eruption of fine, red papules on the face on the eighth day, and in another upon the ninth, both being associated with no rise of temperature. The eruption in all cases was transient, in a very few instances lasting over twenty-four hours.

Up to the present date, May 24th,* 1895, a period of thirty-seven days, not a single case of diphtheria has occurred in the children injected. The only diphtheria developing in the institution has been in the person of one of the resident physicians who was not injected.

In connection with this report, I wish to refer to results obtained in the New York Infant Asylum. Dr. G. A. Peck, the resident physician, on April 3rd, made a report in a discussion before the New York Academy of Medicine (*Medical Record*, April 20th,) upon these cases. I will give a brief summary of his report and bring the record down to the present time.

An epidemic of diphtheria began in this institution on September 5th, 1894. There occurred during September, 16 cases; during October, 32 cases; in November, 30 cases; December, 31 cases—this in spite of every effort to check the spread of the disease by quarantine and disinfection. From January 4th to January 14th, 12 cases developed, 9 of these from January 9th to January 14th.

On January 16th and 17th, 224 children were injected with Behring's Antitoxin No. 2, the dose being from 100 to 200 units, according to the age of the children, this being from 1 to 4 years. The following are the dates of appearance of the cases of diphtheria after the first inoculation:

1st case, February 3rd, 18 days after injection.
2nd case, February 15th, 30 days after injection.
3rd case, February 22nd, 37 days after injection.
4th case, February 24th, 39 days after injection.
5th and 6th cases, February 25th, 40 days after injection.
7th case, February 27th, 42 days after injection.

On February 27th and 28th, the new cases having appeared with such frequency during the past few days, it was believed that the immunizing effect of the first injections had, in a measure at least, passed away; and 245 children were injected with serum obtained from the New York Board of Health. The dose given was slightly

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*June 21, 1895, the Hospital has remained free from diphtheria up to the present time.
L. E. H.

larger than in the previous instance. The following are the dates of the cases following this inoculation:

1st case, March 30th, on the 31st day.

2nd case, April 17th, on the 49th day after first injection, 13th day after second.

3rd case, April 19th, on the 51st day.

4th case, May 3rd, on the 65th day.

From May 3rd to May 25th, the date of this report, no cases occurred.

With the outbreak of the case developing on March 30th, cultures were made from the throats of all the children occupying the same ward. In four of these the Klebs-Loeffler bacilli were found, and these children were given a second immunizing dose on April 5th. The case developing April 17th was one of these four children. The cases occurring on April 19th and May 3rd were from other parts of the institution.

The shortest time after injection at which diphtheria developed, was in the case appearing April 17, which was on the 13th day; the next, the case of Feb. 3rd, on the 18th day. With these two exceptions, no cases developed diphtheria under thirty days, although the children were constantly exposed to infection.

I present these facts without comment. They are, to my mind, conclusive, and I think that no unbiased observer can look over these figures without being convinced that the injection of antitoxin for immunizing purposes is of inestimable value.

15 EAST FIFTY-FOURTH STREET.

THE VALUE OF THE ANTITOXIN IN DIPHTHERIA, AND ITS TOXIC AFTER-EFFECTS.*

BY A. SEIBERT, M.D.,
New York.

Since December 1, 1894, I have treated with diphtheria antitoxin twenty-eight cases of bacillary diphtheria (where the Loeffler bacilli were found by the New York Health Department). Two of these were suffering from marked hemorrhagic nephritis before the serum was injected, showing marked improvement within twenty-four hours after injection. Both recovered. Six of the twenty-eight cases presented laryngeal stenosis, requiring intubation in four. Of these, five recovered. Albumen was found in the urine of twenty injected children, before the antitoxin was used. Of the twenty-eight children, two died, both infants. The first, thirteen months old, was injected (20 c.c.m. of serum from the Pasteur Institute), while moribund, entirely against my advice, at the urgent request of the parents and the attending physician. The other, nine months of age, was first intubated for stenosis and then immediately after injected (10 c.c.m. of Behring No. 2), did well for eighteen hours, and then died suddenly of heart-failure.

The other twenty-six cases made unusually rapid recoveries, although eight of them suffered from naso-pharyngeal, five from laryngeal and pharyngeal, and four from malignant diphtheria of the entire pharynx. Twelve patients were under two years, and five under one year of age.

A rise of temperature after the injection was noticed in ten of the twenty-six recovered cases. Of these, was one of my own children. In five of the twenty-six recovered patients, severe toxic after-effects appeared in from seven to nine days after the injection of the serum, when all evidences of diphtheria had disappeared, consisting of erythema, high fever (103°–105.4° F.) prevailing four to eight days, infiltration of cervical and inguinal lymph nodes, and articular and muscular inflammations, all disappearing in from five to ten days, but usually leaving considerable weakness in the affected muscles for a week more. In two of these five cases traces of albumen appeared during the attack. In all of these 20 c.c.m. of the serum obtained from the Pasteur Institute in New York during December, 1894, was injected in each case.

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* Read before the American Pediatric Society at its Seventh Annual Meeting, at the Virginia Hot Springs, May 27, 1895.

I have immunized thirty-six children by the injection of 200 antitoxic units in each (Behring's serum). All remained well.

As I am of the opinion that all theoretical discussion regarding the value of Behring's remedy for diphtheria is of no value whatsoever, I refrain from all further remarks upon this subject.

114 EAST FIFTY-SEVENTH STREET.

Diphtheria in Animals—One very important factor in the spread of diphtheria is the existence in cats and dogs of diphtheria. The disease manifests itself in cats and dogs not by the existence of marked membrane in the throat, but by the condition of the lungs simulating pneumonia. The animal has a peculiar strident cough; has anorexia and loses flesh rapidly. At the bacteriological laboratory, recently, cultures taken from the throats of a cat and a dog that had been exposed to diphtheria revealed the presence of the bacillus of diphtheria. This organism disappeared from the throat of the cat in about two weeks; as the dog was killed, no further investigation could be made.

Cows may have diphtheria, and when suffering from the disease may be a source of infection. Klein, traced an epidemic of the disease to milk from cows that gave unmistakable evidence of being ill of diphtheria. Small areas of false membrane were found on the teats of these cows. Cultures made from these lesions contained the diphtheria bacillus. Cats fed on the milk from these cows contracted diphtheria. While there is no positive evidence that the milk in the udder contained the germ of the disease, there is every reason to believe that the milk was contaminated by the hands of the milkers.—MCCOLLOM in *Boston Med. Jour.*, cxxxii., 19.

DISCUSSION ON ANTITOXIN.

Dr. J. H. Fruitnight reported four cases of diphtheria in which antitoxin was administered. The injections were made in the usual manner by his associate in practice Dr. George Bieser. The histories were as follows:

CASE I—Geo. S., five years, was first seen on February 20, 1895, with indefinite history of illness for three preceding days and the following symptoms: vomiting, prostration, fever, pulse 130, odenopathy, almost intolerable fetor from throat, diphtheritic patches on both tonsils.

On February 21st, the membrane had spread to the naso-pharynx. Bichloride of mercury, muriated tincture of iron, and stimulants were given until five P.M. when ten c.c. of Behrings 600 unit antitoxin was injected into the lower part of the right axilla.

On February 22d, Dr. Geo. Schlereth was called in consultation. The nose discharged fetid pus; the urine was markedly diminished and loaded with albumen; there was stupor, coldness of extremities; the pulse was 130, temperature 101° F.; the fetor from the nose and throat was cadaveric; the mercury, now producing marked systemic effects was stopped, but more energetic stimulation was now resorted to.

On February 23d, there was less pus discharged from the nose; the fetor was almost gone; the circulation was better; the membranes seemed to be thicker and more detachable at the edges; the congestion in the throat seemed to be lessened; the urine was still diminished and albuminous. Peroxide of hydrogen spray in alkaline solution was used and at eleven A.M. ten c.c.m. of Behring's 1,000 units antitoxin was injected into the left thigh. At eight P.M. the spraying was discontinued, because of the boy's resistance.

On February 24th, there was a decided change for the worse; the pulse was almost imperceptible; the extremities were cold; the temperature was 96° F. in rectum; the urine was practically suppressed and heavily loaded with albumen; although the child had coughed up pieces of yellowish membrane, the discharge from the nose had stopped, and there was hardly any membrane in the throat. At eight P.M. of the same day, the temperature had risen to

98° F. and the circulation was better; but no urine had been passed since morning except a teaspoonful and that was loaded with albumen. He now presented a very peculiar symptom, viz.: he screamed every time he swallowed anything, even a drop of fluid, and held his stomach as if in agony.

On February 25th, the pulse was 98, temperature 98.6° F.; still very little urine (teaspoonful in twelve hours); the fetor was gone; there was no more discharge from the nose; there were only a few patches of membrane left; but the agony on swallowing, in spite of this apparent improvement in the throat, was worse than ever. Rectal feeding was ordered.

On February 26th, this state of affairs continued, and on February 27th he died with a slow but almost imperceptible pulse while sitting up in bed.

CASE II—Annie S., seven years, sister of preceding; when first seen on February 21st, she was prostrated, vomited, had a temperature of 101.5° F., pulse 120. The pharynx and tonsils were red, but no white patches were present.

On February 22d, white patches were visible. Ten c.c. of Behring's 600 units antitoxin was injected. That evening the temperature had fallen to 99.5° F., the pulse was still 120, the child swallowed better.

On February 23d, the pulse was still 120, the white patches were larger, the temperature was 103° F., there was more pain on swallowing.

On February 24th, the child was decidedly better, temperature 99°, the membranes were loosened at the edges, that of the right tonsil looking shriveled up, that upon the left tonsil being nearly gone.

On February 26th, the membrane was gone, having taken five days to disappear. The child ate and slept well, and was discharged cured; but one week later it was learnt that Dr. Schlereth was treating her for a severe nephritis which yielded however to treatment.

CASE III—Chas. L., ten years, was seen on March 27th. He had been feverish and had vomited the night before. The pulse was 120, there was present a greyish membrane upon the right tonsil of the size of a dime. There was distinct fetor, pain on swallowing, epistaxis, but no adenitis. After twenty-four hours of treatment with iron, bichloride of mercury, and whiskey the boy was apparently much better; he had no fever but still had a rapid pulse, 120. The parents having heard of the antitoxin wanted it used. Accordingly ten c.c.m. of Behring's 1,000 units antitoxin were injected into the right thigh.

On March 29th, the boy was much better in every way, the membrane looked as if it were a linear strip.

On March 30th, membrane was gone.

CASE IV—Annie L., eighteen months, sister of the preceding. On March 29th, she did not complain of being sick, but showed three small patches of membrane limited to the right tonsil. There was no fever, the pulse was 126, ten c.c.m of Behring's 1,000 units antitoxin were injected. On March 30th, there was a single patch formed by the coolescence of the three spots already mentioned. The pulse was 130, the temperature normal.

On April 1st she was discharged as cured.

In giving the history of these four cases I have no comments to make but merely give the facts. In the first case, the antitoxin seems to have caused suppression of urine, worse after the second than after the first dose; still even here it had a remarkable effect on the fetor and membrane. The appearance of pain upon deglutition in the first two cases recorded, after the antitoxin had been injected is somewhat peculiar and noteworthy.

In the early periods of an attack of diphtheria, antitoxin is doubtless of some benefit. Its usefulness I think will be limited to cases which may be seen early, and to immunization of those who have been exposed to infection. In the later periods I am inclined to rely upon the older methods of treatment by the exhibition of the bichloride of mercury, calomel fumigations, iron, and stimulants.

Dr. William Osler: Of ten patients admitted to the isolation ward of the Johns Hopkins Hospital nearly all of which were adults, eight received the antitoxin, the general effects of which seemed to be very satisfactory, particularly in the reduction of the temperature and a more rapid clearing of the throat than one is accustomed to see.

Several of these cases are of a good deal of interest bacteriologically. One, a woman aged fifth-eight, was admitted with general anasarca and the signs of chronic Bright's disease. Five days before admission she had had a severe chill. The tonsils were swollen and reddened, and covered by greyish yellow membrane. The cover slips and the cultures made during life by Dr. Blumer, my bacteriological assistant, showed at first a pure culture of the streptococcus pyogenes and we thought that it was probably a streptococcus diphtheritis. Subsequently, however, typical diphtheria colonies developed, and at the autopsy there was membrane in the larynx, trachea, and bronchi, with Klebs-Loeffler bacilli. There was also present general streptococcus infection. In another case, a boy aged four, there had been earache for three days, and on admission there was a discharge from the right ear. He had not complained of sore throat. He had a coryza, and there was excoriation about the nose. The Klebs-Loeffler bacilli were present in the discharge from the ear, and also in that from the nose. On the seventh day after admission he had an excoriation at the base of the left thumb, and the diphtheria bacilli were obtained from it. Though there was never in this case any membrane in the throat, both diphtheria bacilli and streptococci were obtained from it.

In a woman aged thirty-two, who had been in the hospital for some months with progressive muscular atrophy, the throat was reddened and swollen, but presented no membrane. The temperature was 101.7°. Cultures from the throat showed a number of the long variety of the Klebs-Loeffler bacilli. Cultures from the nose were negative. Of course she was not given the antitoxin. In a woman aged twenty-three the local condition of the throat was really that of a follicular tonsillitis. The exudate seemed to ooze directly from the crypts. On the day following, there was a small area of membrane on the left of uvula. Cultures showed a large number of diphtheria bacilli.

The first case which came under treatment was of interest, inasmuch as the bacilli persisted in the throat for a period of eighty-four days. In a woman aged twenty-two, with reddened and swollen tonsils, but without distinct membrane, the cover slips showed a shorter, plumper bacillus than the Klebs-Loeffler, which corresponded in cultures to the diphtheria bacillus except that it did not acidify litmus bouillon, but alkalinized it, and grew much more profusely on ordinary media. Inoculations of a guinea-pig were negative. In two cases the streptococcus pyogenes was present in pure culture In both, there was membranous exudate on the tonsils. In another instance, a man aged thirty-two, who had had diphtheria when a child, had a sore throat for three days, but when under observation did not present any membrane. The cover slips showed a number of very fine bacilli. The cultures showed an almost pure culture of the bacillus pyocyaneus.

The point which could be discussed with profit refers to the nomenclature of the cases, in which the Klebs-Loeffler bacillus are not present. What are we to call them? The term pseudo-diphtheria is certainly misleading, as clinically many of these cases are as intense and virulent as the Klebs-Loeffler form. It seems to me we have a choice of either using the term *diphtheroid*, which has been employed by several German authors, or of using the anatomical term, diphtheritis, as Dr. Welch suggests, and specifying a streptococcus diphtheritis or a staphylococcus diphtheritis, depending on the nature of the organism found. At present there is certainly a good deal of confusion, owing to want of harmony between the clinical and bacteriological studies. In any case it is well to emphasize the fact that the streptococcus diphtheritis may be just as virulent as the Klebs-Loeffler diphtheria, and may, as has recently been shown, be followed by the paralyses.

Dr. W. D. Booker: While collecting reports on the use of antitoxin in other cities, I wish to add the testimony from Baltimore. We have not had a great amount of diphtheria in Baltimore this year, though I do not think it has been of much less virulent form than usual. My own experience is limited to thirteen cases in which the Klebs-Loeffler bacillus was found. In six of these cases the larynx was involved and intubation was performed. Two were treated with antitoxin and both recovered. Four were not treated with antitoxin and only one recovered. In the seven cases in which the larynx was not involved, six were treated with antitoxin and one was not. All of these cases recovered. Two of these cases were complicated with scarlet fever and were seriously sick, as were also two of the remaining cases, while only three could be considered as mild cases. No bad symptom appeared as the result of the antitoxin in any case. In one case there was an annoying urticaria which lasted two days. I have never had such favorable results in the treatment of diphtheria before.

Dr. Henry Koplik: It is unfortunate that we should talk of bacteriological and of clinical diphtheria as separate entities. A healthy throat in a healthy normal child with Loeffler bacilli in it, is no more diphtheria than a healthy mouth in a healthy individual with diplococcus present is pneumonia. There is no distinction between clinical and bacteriological diphtheria. Given a child ill with angina, even if no membrane be seen, having found the Loeffler bacilli in the throat it is both clinical and bacteriological diphtheria; and given a child ill with membrane in the throat and Loeffler bacilli, it is diphtheria like the first from a bacteriological and clinical standpoint. I wish to insist that calling a healthy throat with Klebs-Loeffler bacilli in it, bacteriological diphtheria is wrong. Again it is very desirable in the immunizing experiments in healthy children before we lay any value on the results from a scientific standpoint, that we should first prove that the bacilli present are diphtheria bacilli by animal experimentation. For in these healthy mouths the bacilli are very few as a rule, and it is not possible always to decide exactly (from simple smear preparations) what they are.

Dr. Woodward: I have no statistics from the District of Columbia, but antitoxin has been quite generally used, and I have heard of no case in which it has caused untoward symptoms, and but one in which death resulted, and that was moribund when injected. As to quarantining children whose throats contain the germs, I am satisfied it is unnecessary, provided it is understood that the bacilli in the throat are dangerous to other people. So long as they remain in the throat of the child they do no harm. They will not fly into the atmosphere to find new throats, and if the child is properly instructed as to the use of other's cups, spoons, etc., they may be allowed to go about without danger. We have however a quarantine law that covers the entire time the bacilli are likely to be found there.

Dr. Henry D. Chapin : I hope we shall hear from Dr. Winters on this subject, as he has said he considers the remedy a dangerous one. In connection with the study of antitoxin let us study serum itself and its possibilities of cure aside from its effects in diphtheria. This is not an empyrical remedy but the result of long scientific study and should be supplemented now by further research.

Dr. Joseph E. Winters : Regarding immunization, I have had no personal experience, but I would state that in the Willard Parker Hospital there is no instance on record of a child having been brought in suspected of diphtheria and proved not to have it, who afterward contracted the disease while in the hospital, which shows that the activity of the poison is not very great, and it is well known that many people are not at all susceptible to the poison, or are naturally immune.

I would like to ask Dr. Morrill if he has taken into consideration the fact that diphtheria increased almost double between the years 1893 and 1894 in the City of Boston. This variation in the type and in the extent of an epidemic, not only of diphtheria but of all contagious diseases, shows that natural limitations should receive due weight. At one time large numbers of people would be affected during an epidemic, at another but very few. Whether this is owing to a difference in the receptivity of individuals at different periods, or a difference in the activity of the poison is not known; probably both are factors. As showing the futility of immunization by serum, Kassowitz states that of sixty-seven children in the "Bukovina" subjected to injections of serum, thirteen were afterwards attacked with diphtheria, and two of these died. Professor Drasche states that the recurrences observed in some cases of diphtheria treated by serum, prove sufficiently that this serum does not possess immunizing properties. Dr. Le Breton says, inasmuch as the injections are not entirely harmless, and as they may determine lesions of the kidneys and a deterioration of the general condition, we think it would be wrong to have recourse to prophylactic injections, as we felt inclined at first.

I should like to know if during the time that Dr. Morrill's experiments were carried on, would not the results have been the same with the other methods resorted to by him, without the use of antitoxin. To my mind these cases prove nothing for antitoxin for immunization purposes.

The advocates of antitoxin treatment for curative purposes base their claims largely on statistics, but they take no recognition of the natural history of diphtheria epidemics. In Boston the mortality in 1875 suddenly rose from 72 a year to 420. Between 1881 and 1894 the mortality varied from 200 some years to over 800 in others. The mortality per thousand inhabitants in 1893 was about one-half what it was in 1894. We are in a dip in the mortality curve at the present time, and this has much to do with the low mortality for which antitoxin gets the credit.

Again, large numbers of very mild cases of diphtheria are brought into the hospitals for antitoxin treatment, whereas, formerly, only the severer cases were brought to the hospital. This also has much to do with the reported statistics of the present day. This is true not only of New York City, but of foreign cities, as stated by Heubner, Drasche, Vierordt, Kassowitz, and Kohts, all of whom state that cases of light degree are brought into the hospitals now that were never seen there before. Kohts, of Strasburg states, "in our city the mortality has not been lessened by the antitoxin treatment of diphtheria." He gives the statistics for five years before the introduction of antitoxin treatment, and for about five months since the antitoxin treatment, and they are almost identical. Kassowitz, of Vienna, states that during the ten weeks that antitoxin treatment was carried on in private as well as hospital practice, the mortality was exactly the same as it was before the introduction of the serum treatment.

I feel absolutely confident that at the Willard Parker Hospital the mortality has been much higher under the antitoxin treatment than it was before, if we were to exclude the numerous light cases such as were never seen in this hospital before the use of the serum treatment; but owing to the varying character of epidemics, as has already been stated, mortality is a very uncertain guide, unless it is extended over a period embracing many years. I would ask the members of the Society to take a new view of the antitoxin treatment of diphtheria. It has been the custom to study and report the cases which have recovered. I will ask them in the future to study carefully those cases of diphtheria treated with antitoxin which die. I have seen numerous cases treated from the very beginning of the disease die from straight, uncomplicated diphtheria, while the antitoxin did not make the least impression on the disease, where there was never the least evidence that a so-called specific had been administered. So you may take the detailed reports of the fatal cases in the various journals, particularly those in the *British Medical Journal* and in Baginsky's Detailed Reports, and you will find numerous fatal cases there reported, which have been treated from the first and second days of the disease and which have ended fatally, one week, ten days, two weeks, seventeen days after the beginning of the treatment, and where there wasn't the slightest evidence that the course of the disease had been modified in any particular by the use of the antitoxin. It is these fatal cases which were treated from the very outset of the disease, which, in spite of the antitoxin, run a fatal course, which, must convince any physician who studies his cases carefully, and who has had much experience with diphtheria, that in antitoxin we have not a remedy which is in any sense of the word a specific. I may further say from what I have personally seen of antitoxin in numerous fatal cases treated from the early part of the disease, that antitoxin does nor exert the slightest influence for good in any severe case of diphtheria. I have seen a large number of cases where to my mind, the patient was injured by the serum. Some of these have already been detailed in former remarks.

It is pretty generally believed that antitoxin is an absolute specific against the action of the diphtheria toxines in guinea-pigs. The facts are, that of twelve guinea-pigs given antitoxin by Behring, and subsequently injected with toxines, eight died. Of twenty-one injected with antitoxin and toxines at the same time, twelve died. Of seven injected first with toxines and subsequently with antitoxin, six died and only one survived. It is on these results that Behring bases his claims for the antitoxin treatment of diphtheria.

Dr. Wm. Osler: Dr. Winters has, I think, done Dr. Baginsky an injustice. His most recent paper on the subject puts his mortality at only fifteen per cent.

Dr. A. Jacobi: I have read the article referred to by Drs. Winters, and Osler, and think I can explain their difference. There were two papers and although both came out recently, one had probably been written some time ago and lain in the hands of the printer for a long time. He was the first to report a large number of cases; then followed Roux with his cases. The cases of Baginsky extend over a period of one year and it struck me as a most important fact that it included two months during which he had no serum. During these two months, the mortality rose from seventeen or eighteen per cent. to thirty-eight, in other words, went back to the mortality of former years. That is to my mind the most conclusive fact that has been brought out. That the cases seen were very bad, is proved by the fact that since 1890 in about 2,000 cases of diphtheria, there were 553 operations, tracheotomy and intubation. One fact that struck me when I read that paper, was that he has intubated and tracheotomized a great deal, and that many of his intubation cases had to be tracheotomized later. Since the use of antitoxin he reports that the number of operations has been very much decreased, and a large number of cases that would otherwise have developed laryngeal symptoms, did not. He has found, too, that where he intubated there was very seldom necessity for tracheotomy afterwards. He states that while formerly they never believed that intubation could do as well as tracheotomy, since the introduction of antitoxin, the result is quite different. He tracheotomises less and intubates more. Altogether, the last paper of Baginsky is very much more favorable to the antitoxin treatment than his former one. As to the specificity of antitoxin, it is not necessary that every case of diphtheria should be cured to uphold this point. Quinine is specific in the treatment of malaria, and mercury is generally accepted as such in syphilis, and yet there are many cases of each disease affected probably, but not cured by these remedies.

Dr. E. M. Buckingham, at this point read a paper entitled "Cases Apparently Diphtheria but in Which the Diphtheria Bacillus is not Found."

Dr. A. Jacobi: I would add from Dr. Baginsky's book, his statement on the presence of albuminuria and clinical nephritis. The results he arrives at, are, that there are less cases of albuminuria and clinical nephritis in antitoxin cases than in the others; next, that in diphtheria, nephritis is of common occurrence, and differs from the course of nephritis in scarlatina in that it appears on the third or fourth day; in scarlatina, not until the second week. To those who are opposed to the use of antitoxin, I would say that Baginsky makes the remark that he does not confine his treatment to antitoxin, but relies on cleansing antiseptic applications as much as formerly. In regard to the nature of diphtheria, I believe, that after having observed it since 1858, I have only lived long enough to learn that I do not know what diphtheria is. Formerly we called diphtheria a disease in which the fauces, nares, and neighboring mucous membranes were covered by a deposit consisting of changed epithelial cells and fibrin mixed with a few blood cells and leucocytes, and accompanied by more or less fever. Then the bacillus was found and identified with the diagnosis. There were some at this early day, ten or twelve years ago, who as a number of microbes were found in such membranes, expressed the opinion that diphtheria need not be the product of one microbe alone but that the same disease might be the result of a number of microbes, the toxines perhaps being identical. As time went on, the bacillus was found more and more frequently, and it was stated that diphtheria must be the result of that microbe alone, and cases in which no bacilli were found, were declared to be pseudo-diphtheria, or diphtheroid. From this it has been said, that those cases that look exactly like the bacillus cases but do not contain the bacilli should not be called diphtheria. Now it has always seemed to me, that this was simply an agreement among bacteriologists, and we should not declare it as an axiom. I am satisfied to have it said, I do not know what diphtheria is. I have changed my ways in the last fifteen years and have learned much, but have not yet learned, or am not quite positive that I have to exclude from the diagnosis of diphtheria, those cases that are of streptococcus origin. The worst cases are not those of the simple bacilli alone, but those of mixed form. It is the mixed cases that develop high temperatures.

Dr. F. Gordon Morrill, asked if Dr. Winters in referring to the varying character of different epidemics meant to imply, that in one epidemic the disease was more infectious than in another. Last year the hospital was closed three times on account of diphtheria. This year started in with nine cases occurring within four or five days, and the hospital did not have to be closed once.

Dr. A. Seibert: First, let me make a historical correction. Professor Heubner, not Baginsky made the first report on the treatment of diphtheria patients with antitoxin at the International Medical Congress at Rome, 1894. I do not understand why Dr. Winters attributes suppression of urine in some of his cases to the antitoxin used, and not to the sudden infection of the kidneys by diphtheritic poison, as we have seen before antitoxin was known. I recorded the two deaths that occurred in my collection of antitoxin cases and cannot recall any paper in German literature, where statistics were modified so as reduce the mortality figures. I wish to refer to two statements of Dr. Koplik's; that cases of tonsilitis, but without membrane where the Loeffler bacillus is found in the throat, we must diagnosticate as diphtheria, and when the bacillus is found without pseudo-membrane, we have no more right to diagnosticate diphtheria than to diagnosticate pneumonia where we find the pneumococcus in the throat without other clinical symptoms. He at times rests his diagnosis upon the membrane and at times upon its absence. It is new to me that the Loeffler bacilli at times cause pseudo-membrane and at times do not.

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A Model Secretary—The American Pediatric Society is most fortunate in the possession of a secretary whose equal has rarely been seen. Tireless energy, exhaustless patience, ability to make every one his friend, to be everywhere, to arrange every thing, to foresee every emergency, are a few of the qualities of this remarkable secretary. Whether in managing a railroad company, running a Pullman car, arranging a society meeting, or demonstrating an anatomical anomaly, he is inimitable. No man in the society carries away from its successive meetings more good wishes than does Samuel S. Adams.

Clinical Memoranda.

A CASE OF BROMIDE ERUPTION IN AN INFANT.

From the Service of Dr. Henry Koplik, Good Samaritan Dispensary, New York.

BY EMILY LEWI, M.D.

The ordinary pustular acne, due to bromide eruption, is easily diagnosed. Atypical skin lesions from such cause are sometimes found; this is especially true in infants. Cases reported, illustrate very well how polymorphous these manifestations may be. Cases have been reported by Croker, Hutchinson, Lee, Taylor, and Muller. The following case although partaking of some of the features of reported cases, is unlike them in some respects.

An infant, aged ten months was brought to the Dispensary on April 11, 1895. The mother said that four months before, the child had a swelling on the left side of the neck. This grew steadily larger for some weeks, until the physician advised poulticeing. Shortly before the poulticeing was begun, the mother said the child was so restless, that she begged the physician to give her something to quiet her. This request was acceded to. After poulticeing four or five days, the gland was lanced. Within two days the mother first noticed the eruption on the chin. The lesions were very small at first, about the size of a lentil and bled readily. They continued to appear, and were next observed on the cheeks, neck, and shoulders. The lesions that came at this time were larger than the earlier ones. The exanthema now spread to the upper part of the chest, the arms, and legs. These later lesions on the extremities, the mother says, were from the onset larger than those of the chin, neck, and face. New ones were observed every day, averaging the size of a dime, were raised above the skin more than those first noticed. Some were filled with yellow matter. The child was put on antiseptic treatment, and was placed in a hospital where it remained one week. Two days after it was taken from the hospital the child was brought to the clinic, when the condition was as follows: the child was a fairly nourished, pale, breast-fed infant, the fontanelles are still open, the mucous membrane of the mouth was normal; there were three teeth. The condition of the skin was as follows: The face especially on the chin and cheeks, was covered with dark red lesions, varying in size from a pin-head to a dime. Many of these were confluent, but others showed the mass to be composed of a number of individual lesions. On the cheeks, several large circular lesions were noted. The skin between these was normal. The larger patches were distinctly serrucoid in character, much raised above the skin, dark red, and with a central depression, showing that the process had spread peripherally. On looking closely, a yellow discolorature could be seen underneath the wart-like excrescences, especially toward the edge of the lesion. The smaller lesions were likewise papillomatous, with red discoloration and central depression. Palpation shows the growths to be soft and painless. The upper anterior portion of the chest and shoulders were studded with smaller lesions averaging the size of a pea. The extensor surfaces of the arm and forearm, the gluteal region, and the anterior surface of the legs, showed the preponderance of the large oval and circular lesions. Here the same fromborsiform appearance was noted. The central depression was marked; the newer lesions were bright red, the older ones of a reddish brown hue, convex and circumscribed. Scraping off the papillomatous portion showed a bright red base, which bled easily. A few small lesions were found where the forehead and scalp met, the remainder of the scalp was clean. The abdomen, the back between the shoulders, the gleuteal region, hands, and feet are quite free. There were no scratch marks nor mucous patches.

Salycyllic ointment was given to the mother to be applied twice daily and Fowler's solution, half a minim three times a day, was prescribed. The improvement was immediate. The warty crusts became smaller, dryer, and darker. The lesions cleared always from centre to periphery. On May 11, the pigmentation of the skin was the marked symptom. On passing the hand over the face, the skin was smooth. The lesions that cleared first, showed a dusky brown, the others a deep red discoloration. In a few scattered places there was slight induration of the skin. Occasionally at the periphery of a lesion, some slight scaling was still to be detected.

A diagnosis of bromide eruption was made by Dr. Koplik, who had seen a similar case some years before, in a nurseling whose mother was taking bromides for epilepsy. In one case it was afterward learned that at the time of the adenitis, the physician prescribed bromide for the childs restlessness. It is also known that paregoric was given to the child. The diminution of the excretions increased the child's susceptibility to the retained drug, a fact well brought out by Hutchinson.

The eruption showed in many respects considerable analogy with a tertiary verrucous syphilide. The symmetrical involvement of the parts, the polymorphous character shown by the variations in size, the absence of pruritus suggested specific disease. On the other hand, careful inquiry failed to elicit a syphilitic family history or previous symptoms in the patient. The tertiary lesion taking this form, is the most difficult to cure, and leaves as a rule many white scars. In this case, after four weeks, a few superficial scars are all that can be seen. The mucous membranes are nowhere involved, no sign of a mucous patch, fissure, or rhagas could be made out. The history of bromide medication, together with the rapid improvement when arsenic was administered, and the non-appearance of new lesions after that time, make the diagnosis clear.

A CASE OF RETROPHARYNGEAL ABSCESS.

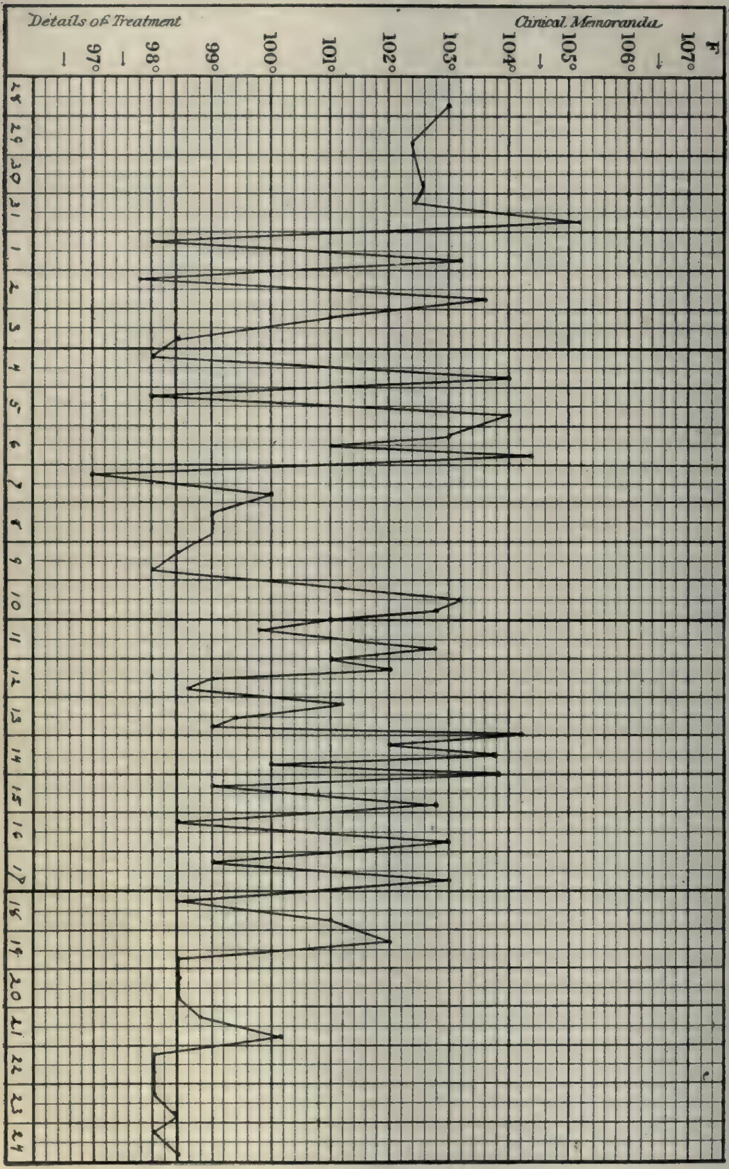
BY ALFRED HAND, JR., M.D.

Philadelphia.

The following case is interesting, not only from the comparative rarity of the affection presented, but also from the possible mode of infection and from the difficulty of diagnosis:

Leon D., aged 22 months, has never been in robust health, although the only point to be noticed, in an otherwise negative family history, is that his maternal grandfather died of pulmonary tuberculosis. The child has a congenital wry-neck, marked congenital phimosis, and is somewhat rachitic, presenting a rosary, and a slightly enlarged liver, which causes the lower ribs to protrude a little. He is fairly well nourished, however, and has the usual number of teeth. From Feb. 6th to Feb. 26th, 1895, he passed through an attack of catarrhal pneumonia, after the cessation of which he seemed in better health than usual.

The present illness began March 24th with fever, a general "peppery" rash, with swelling and stiffness of the neck, and a disinclination to swallow, although there was marked thirst. When called to see him, three days later, the rash had faded, but the fever continued (103°), and the pulse (170) was accelerated out of proportion to the fever. The right parotid was decidedly swollen, the left slightly so, and the diagnosis of parotitis was established, especially as the disease was epidemic at the time in Philadelphia. The child's throat seemed a little reddened, the lungs were clear, and the bowels regular. From the history of the eruption, the sudden onset, the red throat, and the pulse-temperature ratio, the possibility of a scarlatinal infection was also considered, but as there was no subsequent desquamation, and as a hot bath had no effect in causing a return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of the rash, this view was abandoned. A fever mixture, containing sweet spirits of nitre and citrate of potash, was prescribed, and 20 drops of whiskey ordered every three hours; a cool sponge bath was given every three hours if the temperature rose to 103°. For four days the condition remained about the same, the child sleeping fairly well, but being very restless when awake. On March 31, the evening temperature rose to $105\frac{1}{5}°$, falling to 98° the next morning, when he was rather weak, but seemed more comfortable. The pulse still remaining about 160, one drop of the tincture of digitalis was given every four hours.

The right parotid had subsided a little, and it was hoped that convalescence had begun, but the evening rise of temperature suggested some complication, although none could be discovered. In a few days the left parotid increased somewhat in size, and the gums were red and tender, the latter condition yielding to a mouth-wash of potassium chlorate.

The temperature now began to range from 97° to 98° in the morning, to 104° in the evening, with no lesion to account for it, the parotids having subsided, but the lymphatic glands at the angle of the jaw being swollen and hard. There was no heart murmur, the lungs were perfectly clear, the abdomen was soft and not tender, and the urine was normal. The spleen, however, was somewhat enlarged, and with the idea that there might be a malarial element, quinine was given in fairly large doses (12 grains in 24 hours), and the blood examined for the plasmodium with negative results. The temperature still continued its irregular course, sometimes low in the morning and high in the evening, somtimes the reverse, and occasionally oscillating three or four degrees several times a day.

For a short time the case was considered as possibly influenza, with neuralgic pains, as the child would often stop while playing with his toys and scream as though in intense pain. Quinine and tincture of nux vomica were administered in tonic doses, and paregoric given at night, when necessary, for sleep. Tuberculosis and abscess were also considered among the possibilities, and a careful watch was kept for some organic lesion. Inspection of the throat was made almost daily, revealing only slightly enlarged tonsils, with a catarrhal laryngo-pharyngitis.

By the middle of April, the child had become intensely anemic, a blood count showing red and white discs in normal amount, with fifty per cent. hemoglobin. The absence of marked leucocytosis militated against pus formation, but from the 8th of April the diagnosis rested between tuberculosis and retropharyngeal abscess. On that day, the mother reported that he would get quite blue at times, and seemed to have trouble in swallowing. Inspection of the pharynx still revealed nothing. Respiration was snoring during sleep, and was irregular at times. He seemed more comfortable with the head thrown back, but the mother, when questioned on this point, said that that was a habit he had always had. The voice, according to the mother's statement, was altered, though in what way could not be ascertained. There was nothing in the case at any time to suggest croup.

April 16, the mother reported that he ate a hearty breakfast, but that it took a very long time for him to swallow.

April 17, Dr. J. P. Crozier Griffith was called in consultation, and there was still nothing to be seen in the pharynx.

The treatment was now altered to cod liver oil and arsenic. Two days later deglutition was impossible, and the pharynx was nearly occluded by a fluctuating swelling arising from the posterior wall, seeming about as large as a good-sized hickory-nut. With the aid of a mouth gag, a finger was introduced, holding the epiglottis down, and serving as a guide for a guarded bistoury, with which the abscess was incised. The contents were then pressed into the mouth with the finger, and the child inverted, allowing the pus to flow out. The quantity was estimated to be about a drachm. Examination for tubercle bacilli was negative. In five minutes the child was sleeping quietly.

The temperature fell to normal, and remained there for a day and a half, when it rose to 100$\frac{1}{5}$°, with signs of a mastoiditis behind the right ear. The auricle was pushed from the side of the head by a reddish, doughy swelling, and suppuration seemed imminent, if not already established. Hot flaxseed poultices, frequently renewed, a calomel purge, and a hot foot-bath, were followed by a return of the temperature to normal, and a rapid subsidence of the swelling, so that on the following day the poultices were changed to dry heat. After another day the swelling had entirely subsided, the temperature remained below the normal line, and the boy was up and playing about the room. With the exception of this brief interruption, the boy ate and slept well, and convalescence progressed rapidly.

Concerning the etiology of retropharyngeal abscess, Casselberry (Starr's *Amer. Text-book of Diseases of Children*, p. 443) says: "It is now well established, that retropharyngeal abscess arises ordinarily, not in caries of the cervical vertebræ, but in suppurative inflammation of the lymphatic glands which are imbedded in the posterior pharyngeal wall. In harmony with the accepted views of the origin of pus elsewhere, the source of this inflammation must be infection, either from within, or without the body, by some one or more of the pathogenic micro-organisms which produce suppuration. * * * It is most reasonable to regard it as a secondary infection of the pharyngeal lymphatics, from inflammation of exposed and associated muco-lymphoid glands, like the faucial and nasopharyngeal tonsils." As rare sources of infection, are mentioned rhinitis and suppurative otitis; the usual sources, however, being folliculous or suppurative tonsillitis and pharyngitis, symptomatic of the acute exanthemata.

In this case there was no nasal catarrh until the abscess had formed; otitis was excluded by frequent examinations during the course of the illness; tonsillitis was not visibly present, but there was a catarrhal pharyngitis from the time that the abscess was suspected. It remains, therefore, to speculate how far the parotitis was responsible for the lymphadenitis with subsequent abscess formation. This must be speculation as long as we do not know the cause of epidemic parotitis, but it seems probable that the parotitis acted only indirectly, by setting up a stomatitis and pharyngitis, thus favoring the direct entrance of the germs into the muco-lymphoid glands.

According to most writers, the course of idiopathic retropharyngeal abscess is rapid, scarcely longer than a week, in children; sometimes taking two weeks in adults. The three weeks of development in this case, might possibly have been shortened a few days, if palpation of the pharynx had been practiced earlier, a point upon which Phocas (*Semaine Med.*, 1892, xii., p. 522) lays great stress.

It is recommended by many surgeons to open the abscess by an incision along the posterior border of the sterno-mastoid muscle, and certainly every case arising from caries of the cervical vertebræ should be treated in this manner. In a hospital, such a procedure is comparatively easy; in general practice it is not; and in the present acute case, it seemed unnecessary to supplant a minor by a major surgical operation, especially in view of the favorable, high location of the abscess, and the many times that the pharyngeal incision has been done successfully. Its disadvantages were weighed, and, as far as possible, guarded against, the result apparently justifying the course pursued.

Editorial.

PORTALS OF ENTRANCE OF TUBERCLE BACILLI.

ACCURATE knowledge of the causes of disease must underlie all rational preventive medicine. One of the most important factors in the prevention of an infectious disease is a knowledge of the portals of invasion of its specific germ. Tuberculosis causes more than one-tenth of all deaths, the mortality being especially large among infants. It is extremely rare among the newborn, although authentic cases have been reported. Holt recently saw a child who died when six weeks old with *advanced* tubercular lesions. The mother, who died at about the same time with general tuberculosis, had tubercular endometritis. The disease is seldom seen under three months. It becomes very common during the last six months of the first year, the mortality reaching its highest point during that period. It continues high during the second year, but thereafter steadily decreases year by year. It is common through the whole period of childhood, involving especially the glands and bones.

These facts lead necessarily to the belief that the disease is acquired through infection. There is undoubtedly a form of tissue soil, which favors the development of tuberculosis upon slight provocation. That this provocation is infection by a germ is the belief of all competent observers. The disease is, therefore, in most cases preventable. Effectual prevention involves a knowledge of the means by which these germs effect an entrance into the body. Much careful study has been devoted to this subject during recent years, and our knowledge upon many points has been rendered exact. Northrup has reported the most accurate observations that have been made in this country upon the mode of invasion by the tubercle bacilli in infants. He describes the following four avenues of infection: 1. aspiration, through the respiratory tract; 2. ingestion, through the intestinal tract; 3. inoculation, through abraded surfaces; 4. placental circulation—congenital.

The respiratory tract is by far the most common portal of entrance for these bacilli in young children. The lymph nodes at the bifurcation of the trachea present in a large number of cases the oldest lesions. Cavities, shrunken fibrous tissue, and calcareous masses are well-known to be older than cheesy masses, the miliary tubercule being the most recent lesion. Experiments have shown that dust particles readily reach these nodes, but do not pass beyond them, the glands acting as a filter. It has been demonstrated that tubercle bacilli may penetrate the mucous membrane and traverse the lymph channels without causing any lesion, the first lesion being found in the lymph glands, by which their progress has been arrested. These glands make a strong effort to withstand the ravages of the bacilli, and frequently succeed. A fibrous capsule is thrown about the gland and not infrequently the dead germs are found, long afterwards, imbedded in a calcareous mass within this capsule. In other cases, the glands are not equal to the task imposed upon them, but become cheesy and swarm with bacilli. General infection from these necrotic areas results from their breaking down, and the bacilli being either swept into the circulation or discharged into the bronchi from which they are aspirated into the deeper portion of the lung.

Primary infection through the intestinal tract may occur in infants, but is not common. Milk, containing tubercle bacilli, is the most common source of such infection. It is now the belief of most competent authorities, however, that this occurs far less frequently than many have been led to believe. The mode of infection is identical with that which occurs in the respiratory tract.

Tuberculosis through inoculation, though not common, is known to occur. It results most commonly from absorption of germs by an inflamed or abraded mucous membrane of the nose or throat. The cervical lymphatic glands are in this instance the first to receive the invading germs, and act as do all lymphatic glands similarly infected. The bacilli found in these glands do not, however, seem to be as virulent as those commonly found in the bronchial or mesenteric glands. They are usually derived from the same source as those which invade the bronchial glands. They are inhaled with the inspired air, and are derived from the dry and pulverized sputa of consumptives, this being the most common source of tubercular infection in children as in adults.

Infection by aspiration through the respiratory tact so far exceeds in frequency all other modes of infection in infants, that it may be regarded as the one source of serious danger, so far as tuberculosis is concerned, during the first years of life.

THE AMERICAN PEDIATRIC SOCIETY.

THE seventh annual meeting of this Society, held in May, was one of the most successful in its history. The papers were numerous and were fully up to the standard of former years, which is saying much. They were on the whole more clinical in character than usual, and might, perhaps, be regarded as more practical. Such meetings by stimulating men, who see vast amounts of clinical material to record and report their observations, cannot fail to add much to the common stock of knowledge. This experience recorded by papers and sifted by discussion may thus become, to a certain extent, the experience of thousands of other professional workers, and does not die with the man whose experience it originally was. It would be an error to suppose that the good derived from such meetings is limited to the actual sessions of the society. The constant interchange of opinions during several days of close companionship proves often of as much practical value as the formal discussions. Elevation of tone and the broadening of ideas are perhaps the most important results of such assemblages to the members who participate in them. The knowledge thus gained of what good professional and scientific work really is, and how it is done, necessarily acts as an inspiration to the performance of equally good work. We have no hesitation in saying, that the American Pediatric Society has done more than any other agency to inspire good work in pediatrics in this country, and to place that department of medicine on a firm and scientific basis.

Two discussions of the last meeting were of especial interest—those on the antitoxin treatment of diphtheria, and the eruptions which simulate scarlet fever. The discussion on antitoxin was based on large clinical experience, and was conservative and judicious. Although opposition of a decided type was developed, the prevailing opinion was unquestionably strongly in its favor. There was but slight tendency, however, to dogmatize or to draw decided conclusions until more evidence is available. The following resolution was adopted: "That in the opinion of this Society, the evidence thus far produced regarding the effects of the antitoxin of diphtheria, justifies its further and extensive trial." Although this is a very mild statement, the propriety of formally committing the Society upon such a subject, even to a slight degree, seems doubtful.

The discussion on recent manifestations of influenza among children was somewhat desultory, and was not as satisfactory as had been expected. An unusual number of pathological specimens were presented, chiefly cardiac anomalies, some of them being of extreme interest. The suggestion made by Dr. Osler, that a session be devoted at each meeting to the presentation of pathological specimens is worthy of the consideration of the Council.

Dr. Forchheimer proved an admirable presiding officer. Much of the excellence of the discussions was due to his judicious conduct of the meetings. In electing Dr. O'Dwyer as its President for the coming year, the Society appropriately recognized one of the most eminent of American pediatric workers, whose achievements richly merit such honor.

THE announcement that an Anti-Vaccination Society has been formed in New York tempts one to repeat the inquiry of Truthful James, as recorded by Bret Harte: "Is our civilization a failure, or is the Caucasian played out?" If such a society can exist at this stage of our civilization, can we expect that any debated question in medicine will ever be settled? Is it strange that the value of Antitoxin is still under discussion?

Society Proceedings.

MINUTES
OF THE
SEVENTH ANNUAL MEETING
OF THE
AMERICAN PEDIATRIC SOCIETY,

Held at the Virginia Hot Springs, May 27, 28, and 29, 1895.

First Day *(Morning Session)*—The meeting was called to order at 10 o'clock by the President, Dr. F. Forchheimer. The minutes of the last annual meeting were adopted as published in the ARCHIVES OF PEDIATRICS. At the request of the Secretary, a resolution was adopted making the following named persons the guests of the Society: Prof. James Stewart, Montreal; Dr. Welford, Toronto; Drs. W. C. Woodward, F. Leech, J. R. Wellington, F. S. Nash, and J. H. Bryan, Washington; Dr. A. A. Angell, Hot Springs; Dr. J. W. Wallace, Warm Springs.

The following members of the Society were present: G. N. Acker, M.D., Washington; S. S. Adams, M. D., Washington; A. Baines, M.D., Toronto; A. D. Blackader, M.D.; Montreal; W. D. Booker, M.D., Baltimore; D. Brown, M.D., New York; E. M. Buckingham, M.D., Boston; A. Caillé, M.D., New York; W. L. Carr, M.D., New York; H. D. Chapin, M.D., New York; W. S. Christopher, M. D., Chicago; F. M. Crandall, M.D., New York; J. Dorning, M.D., New York; F. Forchheimer, M. D., Cincinnati; J. H. Fruitnight, M.D., New York; J. P. C. Griffith, M.D., Philadelphia; L. E. Holt, M.D., New York; F. Huber, M.D., New York; A. Jacobi, M.D., New York; C. G. Jennings, M.D., Detroit. H. Koplik, M. D., New York; W. F. Lockwood, M.D., Baltimore; A. A. Macdonald, M.D., Toronto; F. G. Morrill, M.D., Boston; W. Osler, M.D., Baltimore; F. A. Packard, M.D., Baltimore; B. K. Rachford, M.D., Cincinnati; T. M. Rotch, M.D., Boston; A. Seibert, M.D., New York; L. Starr, M.D., Philadelphia: W. P. Watson, M.D., Jersey City; J. C. Wilson M.D., Philadelphia; J. E. Winters, M.D., New York.

The meeting was opened by the reading of the Annual Address by the President, Dr. F. Forchheimer, of Cincinnati.

Dr. T. M. Rotch, Boston, reported a case of "Cerebro-Spinal Meningitis in an Infant six days old."

Dr. W. F. Lockwood, Baltimore, read a paper on "Purulent Otitis Media which Ended Fatally (3 cases)." Discussion by Dr. A. Caillé.

Dr. Walter L. Carr, New York, reported a case of "Pyo-Pneumo-thorax."

Dr. Samuel S. Adams, Washington, reported a case of "Traumatic Aphasia; Scarlatina Anginosa; Croupous Pneumonia."

Dr. Henry D. Chapin, New York, read a paper entitled "Hyperpyrexia (cases)." Discussion by Drs. A. Seibert, A Caillé, W. P. Watson, A. Jacobi, and H. D. Chapin.

Dr. J. Henry Fruitnight, New York, read a paper entitled "Sarcoma of the Kidney in an Infant (case and specimen)." Discussion by Drs. L. E. Holt, W. Osler, A Jacobi, and A. Caillé.

Dr. George N. Acker, Washington, read a paper on "Lympho-Sarcoma of the Spleen." Discussion by Drs. W. Osler and S. S. Adams.

Dr. Augustus Caillé, New York, read a paper on "Sarcoma of the Supra-Renal Capsule in the Newborn," and presented a pathological specimen. Discussion by Dr. L. E. Holt.

First Day (*Afternoon Session*)—Dr. F. Gordon Morrill, Boston, read a paper entitled "The Immunizing Effects of the Antitoxin of Diphtheria."

Dr. L. Emmett Holt, New York, read a paper on "The Use of Antitoxin for Immunization."

Dr. Augustus Caillé, New York, read a paper entitled "Personal Experience with Diphtheria Antitoxin and Blood Serum Injections."

Dr. A. Seibert, New York, read a paper on "The Value of the Antitoxin of Diphtheria and its Toxic After-Effects."

The subject of the Antitoxin Treatment of Diphtheria was discussed by Drs. J. H. Fruitnight, W. D. Booker, Wm. Osler, H. Koplik, W. C. Woodward, H. D. Chapin, J. E. Winters, and A. Jacobi.

Dr. E. M. Buckingham, Boston, read a paper entitled, "Cases Apparently Diphtheria, but in which the Diphtheria Bacillus is not Found." Discussion by Drs. A. Jacobi, F. G. Morrill, and A. Seibert.

Dr. J. Lewis Smith, New York, read by title a paper on "Tetanus Neonatorum."

Dr. Irving M. Snow, Buffalo, reported by title a case of "Tetanus Neonatorum."

Dr. M. P. Hatfield, Chicago, read by title a paper on "Infantile Tetany."

Dr. Floyd M. Crandall, New York, read by title a paper on "Tetany (two cases)."

Dr. Wm. P. Northrup, New York, read by title a paper on "Typhoid Fever in Infants under Two Years—Is it Frequent?"

Dr. A. Jacobi, New York, read by title a paper on "Scurvy."

Second Day *(Morning Session)*—Dr. B. K. Rachford, Cincinnati, read a paper on "Reflex Irritation as a Cause of Neurotic Disease in Children." Discussion by Drs. T. M. Rotch, L. E. Holt, and A. Jacobi.

Dr. L. Emmett Holt, New York, read a paper entitled "Inanition Fever in the Newly Born." Discussion by Drs. T. M. Rotch, W. S. Christopher, A. Jacobi, J. P. C. Griffith, and W. D. Booker.

Dr. A. Jacobi, New York, presented a case of Pygopagus.

Dr. J. C. Wilson, Philadelphia, read a paper on "Gangrene following Scarlatina." Discussion by Drs. A. Jacobi and W. Osler.

Dr. A. D. Blackader, Montreal, read a paper entitled "Some Forms of Eruption Simulating Scarlatina."

Dr. Charles G. Jennings, Detroit, read a paper entitled "Scarlatinaform Exanthema."

Dr. Louis Starr, Philadelphia, reported several cases of

"Scarlatina with Intensified Eruption and Poorly Marked Constitutional Symptoms."

Dr. A. Seibert, New York, read a paper on "Local Treatment of the Skin in the Eruptive Fevers of Children."

Dr. J. P. Crozier Griffith, Philadelphia, discussed the subject of "Difficulty in Differential Diagnosis."

Discussion by Drs. A. Caillé, H. D. Chapin, J. C. Wilson, J. Dorning, A. Jacobi, S. S. Adams, J. S. Fruitnight, A. H. Macdonald, G. N. Acker, and L. Starr.

Second Day *(Afternoon Session)*—Dr. Wm. Osler, Baltimore, presented cases of Adherent Pericardium in Children, with Enormous Heart Hypertrophy, Chronic Proliferative Peritonitis, and Recurring Ascites.

Dr. Wm. Osler also presented specimens of Cardiac Anomalies: *(a)* Cor biloculare; *(b)* Pulmonary Veins opening into Right Auricle; *(c)* Imperfect Ventricular Septum in a Man, aged 45 years.

Dr. George N. Acker, Washington, presented a case of Aorta arising from the Right Ventricle.

Dr. A. Jacobi, New York, presented a case of Patent Ventricular Septum.

Dr. W. S. Christopher, Chicago, presented a case of Fœtal Endocarditis in a Mal-formed Heart.

Dr. L. Emmett Holt, New York, presented a case of Cardiac Anomaly.

Dr. F. A. Packard, Philadelphia, reported a case of Cardiac Anomaly.

Discussion by Drs. J. P. C. Griffith, W. Osler, and A. Jacobi.

Third Day *(Morning Session)*—Business Meeting—The Council reported as follows: We recommend Montreal, Canada, as the next place of meeting, and the time May, 1896. As officers for the ensuing year, we recommend:

President, Joseph O'Dwyer, M.D., New York.

First Vice-President, James C. Wilson, M. D., Philadelphia, Pa.

Second Vice-President, Henry Koplik, M. D., New York.

Secretary, Samuel S. Adams, M.D., Washington, D. C.

Treasurer, Charles W. Townsend, M.D., Boston.

Recorder and Editor, Floyd M. Crandall, M.D., New York.

Member of Council, A. D. Blackader, M.D., Montreal.

Delegate to Congress, A. Jacobi, M.D., New York.

Alternate, Thomas M. Rotch, M.D., Boston.

Committee of Arrangements, Samuel S. Adams, M.D., Washington, D. C.

As new members, A. H. Wentworth, M.D., Boston; R. G. Freeman, M.D., New York.

We present the resignation of S. C. Busey, Washington, D. C.

We recommend that the papers read at this meeting be published in the ARCHIVES OF PEDIATRICS, that journal to furnish the Society with two hundred bound copies of the transactions.

Upon motion, the report of the Council was adopted by the Society.

The Treasurer's report, together with books and vouchers, was referred to Dr. Jennings for audit. It was found correct and accepted.

Dr. T. M. Rotch offered the following resolution, which was adopted: "The American Pediatric Society wishes, before leaving Hot Springs, to express, through Dr. Chapin and Dr. Brandt, to the Hot Springs Company, their appreciation of the courtesy with which they have been treated during their visit at the Springs. They return their sincere thanks for the comfortable quarters which have been provided for them, and would tender their acknowledgments of the accommodation provided for them by the C. & O. Railroad Company to the company's officials."

Dr. F. Gordon Morrill offered the following resolution, which, after some informal discussion, was adopted: "Resolved, that, in the opinion of this Society, the evidence thus far produced regarding the effects of diphtheria antitoxin, justifies its further and extensive trial."

Upon motion of Dr. Caillé, the Secretary was authorized to publish this resolution in a half dozen of the leading medical journals of this country.

Dr. John Dorning, New York, reported a case of Rupture of the bladder, and presented a specimen.

Dr. Augustus Caillé, New York, read a paper entitled "Tapping the Vertebral Canal in the Lumbar Region.". Discussion by Drs. F. Forchheimer and F. A. Packard.

Dr. Dillon Brown, New York, presented a New Extractor for the removal of Intubation Tubes.

A discussion on the Characteristic Features of the Recent Epidemic of Grippe of '94-'95 was participated in by Drs. L. E. Holt, A. D. Blackader, J. P. C. Griffith, J. H. Fruitnight, J. Dorning, F. G. Morrill, A. Seibert, A. Caillé, E. M. Buckingham, and W. C. Woodward.

Upon motion, a resolution was adopted, thanking the President and Secretary for their efforts which had resulted in making this such a successful meeting.

The meeting then adjourned.

A BULLETIN ON THE PREVENTION OF DISEASES AMONG INFANTS;

Issued by the Board of Health of the City of Newark, New Jersey.*

PREPARED BY HENRY L. COIT, M.D.

This circular is advisory, and deals only with the prevention of disease. The care and treatment of a patient should be referred to a physician.

A large proportion of all who die are infants under one year of age. By far the larger number of infants who die have been fed artificially. It has also been demonstrated that this mortality is chiefly caused by errors in infant feeding.

During the first year infants were designed to subsist on animal food, (namely, human milk;) on this they usually thrive. When deprived of their natural food, the physician, the chemist, and the mother, have been taxed to their uttermost to provide a suitable substitute.

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*This Bulletin is sent by the Board of Health to every family in which a birth is reported.

The results of careful investigation and long experience have proved that fresh cow's milk, when it has been modified to correspond to woman's milk, and then, by some proper treatment, preserved from spoiling, is the best substitute food for the infant during its first year.

ARTIFICIAL FEEDING.

The average stomach of a child at birth holds, when full, about two tablespoonfuls.

The increase in the size of the child's stomach is in proportion to its growth or weight.

The health and vigor of after life is undoubtedly laid in the first year, by proper feeding.

Proper infant feeding usually makes muscular children, with nerve force, not always fat ones.

When a food is substituted for woman's milk, it should contain only what nature designed, and in the same proportions.

Nature does not supply bread or crackers, or meat, or granulated sugar ; and these should not be given to the infant.

Cow's milk, when properly prepared, furnishes a whole and sufficient diet for an infant, and supplies all its needs for robust health.

Fresh milk should constitute the principle article of food for the infant, even after weaning, and during the greater part of childhood.

No infant, under one year of age, can easily digest cow's milk, until changed ; it is weaker in some things, and stronger in others, than woman's milk.

Failures in artificial feeding are chiefly due to three causes. First : Over-feeding. Second : The use of food which is either too strong or too weak. Third : The use of food which is changing or has already spoiled.

The following receipts will change cow's milk into food mixtures, suitable for healthy infants, up to one year :

MODIFIED MILK FOR INFANT FEEDING.

MADE WITH ONE QUART OF BOTTLED COW'S MILK.

For the amount and number of feedings in a day, consult a doctor.

First 6 months.	From 6 to 9 months.	From 9 mos. to 1 year.
The top milk (cream) ½ pt.	The top milk (cream,) 1 pt.	Top milk, 1½ pts.
Boiled water, 1 pt.	Boiled water, 1 pt.	Boiled water, ½ pt.
Milk sugar, 700 grains.	Milk sugar, 900 grains.	White sugar, 3 teaspoonfuls.

Dissolve the sugar in the hot water, add the cream, and divide in separate bottles, putting one feeding in each. Cork them with clean cotton.

One tablespoonful of lime water should be added to every gill of the food.

To preserve the food from spoiling, set the bottles filled, and corked in boiling hot water for thirty minutes. A three-quart covered pail will answer.

THE PROPER CARE OF MILK.

Milk is a delicate animal fluid, highly sensitive to exposure, and quickly spoils unless it receives great care.

Milk is spoiled by the bacteria which fall into it, and which set up fermentations due to their presence in it.

Vessels for holding milk should be made of earthenware, glass, or porcelain, and always be provided with covers.

In open vessels, milk should be counted unclean, for it is thus exposed to invisible droppings of dust.

All utensils designed for milk should first be scoured, then cleansed with soap, and rinsed with boiling water.

Bottles intended for milk should be cleansed with coarse sand, baking soda and water ; then rinsed and scalded.

Empty milk bottles should be properly cleansed ; then filled with boiling water, and allowed to stand until used.

Chemical poisons which germs cast off, and various germs of contagion, are the contaminations in milk most dreaded.

Heat and cold are valuable preservatives when applied to milk ; but extremes of either are injurious and destructive.

Heat is chiefly used to destroy the numerous germs, which contaminate all milk, and which finally spoil it.

Cold is valuable because it retards the growth of germs, while applied to milk, but never any longer.

Milk should never be allowed to freeze, nor be subjected to more heat than necessary to sterilize it.

Milk is sterilized when it has been heated with steam or boiling water, long enough to destroy the germs in it.

Milk is pasteurized which has been heated at 167 degrees Fahrenheit for twenty minutes, and then cooled quickly.

Pasteurized milk is free from harmful germs, and has not been injured, as when completely sterilized or boiled.

Milk is best preserved when stored in small glass bottles, corked with cotton wool, and kept on ice.

When ice is not available, bottled milk should be immersed in cold water, which should be frequently changed.

When the separate feedings of milk are kept in small, closed bottles, the several portions are equally protected.

THE HYGIENE OF THE NURSERY.

Regular habits, proper food, and long hours of sleep, are necessary conditions to a healthy infant.

The three prime essentials in the nursery are fresh air, good food and pure water.

Never put a bottle nipple into your mouth, and then into the baby's mouth ; this will often prove dangerous.

Always hold a baby in your arms, when feeding it, in about the same position as if nursing it.

Feeding in the night, after the third month, is both inconvenient and unnecessary ; sleep at night is better than food.

Do not feed the baby because it cries ; this may be due to pain, and it is hurtful to fill an infant's stomach at such a time.

Have a rule for feeding the baby, and do not vary from it ; without regularity, the mother becomes a slave.

More infant's lives are taken by over-feeding than by starvation. Never liken an infant's digestion or diet to your own.

An infant's thirst is not quenched by milk ; it needs clean water to drink with regularity.

Plain boiled water, given between feedings, will often aid the digestion, and satisfy the child when restless.

Vomiting or diarrhœa are indications that the child is either sick or approaching sickness, and probably needs a physician.

Cholera infantum would be of rare occurrence if proper attention was always given to the quality and quantity of the food.

A nursing mother who worries, or who is exhausted, or who indulges in excitement, may become a source of danger to her infant.

An infant is a creature of habit, and usually responds to the wish of the mother, if the mother has order in her will.

Rubber tubes, complicated nipples and nursing bottles are dangerous, and should never be used.

Light and loose clothing, frequent bathing or cool sponging, are necessities for the infant in hot weather.

Cleanliness, as applied to the body, the mouth, the food, the vessels, the clothing, the furniture, the floor, the carpets, the beds and the atmosphere, should be strictly observed.

ARCHIVES OF PEDIATRICS.

VOL. XII.] AUGUST, 1895. [No. 8.

Original Communications.

INANITION FEVER IN THE NEWLY BORN.*

BY L. EMMETT HOLT, M.D.

Attending Physician to the Babies' and the Nursery and Childs' Hospital.
New York.

I have used this term to describe a fever usually seen during the first four or five days of life, which is independent, so far as has yet been determined, of any local or general disease, but apparently due to starvation. The term "inanition fever" is not a very satisfactory one, and is certainly open to objections; but it serves to emphasize the connection of this temperature with the fact that the food is insufficient or is entirely wanting.

So far as my knowledge goes, the first to call attention to this was Professor J. W. McLane, of New York, who, in 1890, reported to one of the medical societies an extraordinary case of hyperpyrexia in a newly born infant. The report, I think, was never published. The case in brief was as follows: Prof. McLane delivered a woman of a healthy child, and on the following day was called out of town. On his return on the sixth day, he received an urgent summons to come at once, as the baby was alarmingly ill. He found the temperature 106°, and was told by the trained nurse that it had been in that neighborhood for three days. The child had lost weight so rapidly that he could scarcely believe that it was the same infant. The skin was dry and hot, the pulse weak, and the general impression was that of a child who had but a short time to live. The infant had been put to the mother's breast every two hours regularly, but did not seem to be satisfied. On examination, these breasts were found to be absolutely dry, and it is probable that they had never secreted anything worth mentioning. A wet nurse was at once secured, and without other treatment, the temperature fell in a few hours to normal, and did not rise again. The improvement in the general condition was rapid, and the child was soon perfectly well.

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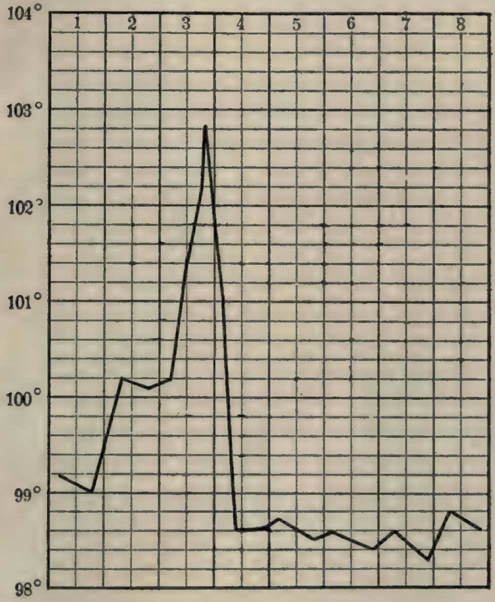
* Read before the American Pediatric Society at the Seventh Annual Meeting, Virginia Hot Springs, May 28, 1895.

The following case which was recently observed in private practice, is a fairly typical one also of the severe type of the disease. The patient was the second child, the first having died at the age of ten days apparently from no disease but simple inanition. At birth the infant, a boy, weighed eight and one-quarter pounds, and was apparently vigorous. During the first forty-eight hours his loss in weight was five and one-half ounces, and his condition good. I saw him on the evening of the third day. In the past twenty-four hours he had lost eight ounces in weight and the temperature had gradually risen, until at the time of my visit it was 102.8° F.

The child was limp, entirely without resistance to examination. He cried with a feeble whine, and the restlessness of the early part of the day had given place to a complete apathy. The lips and skin were very dry; the fontanelle sunken, pulse weak. As the father—a physician—expressed it "he had been wilting through the day like a flower in the sun." Although he had been put to the breast regularly the child had apparently gotten very little. It was found impossible to press any milk from the mother's breasts. Water was given at once freely and a wet-nurse secured in a few hours. The first milk was taken from the wet-nurse at 11 P.M., the temperature (see chart), fell gradually during the night, and the next morning was normal and did not rise again. During the succeeding four days the child gained eighteen ounces in weight, and at the end of a week was as well as any ordinary infant of his age.

During the past five years very extensive observations upon the temperature of newly born infants extending to upwards of 3,000 cases have been made at the Sloane Maternity, and Nursery and Child's Hospitals. These have established the fact that it is not uncommon for newly born infants during the first five days to have a rise of temperature to 102° or even 104° F., which is accompanied by no evidence of local disease, and ceases, in nursing infants, with the establishment of the free secretion of milk. It is also arrested by artificial feeding and very often by water if freely given. The fall in temperature is often quite rapid, frequently dropping to the normal in a few hours, after having lasted for three or four days. In a large number of cases it does not rise again.



The symptoms are so uniform and so characteristic that they make for these cases a class by themselves. The frequency with which this is seen is shown by the following statistics. Among 200 infants taken successively at the Nursery and Childs' Hospital, twenty had fever during the first five days, reaching 101° F. or over, which was not explained by ordinary causes and followed the course above described. In 500 successive children born at the Sloane Maternity Hospital, there were 135 with a similar fever. It was seen in stout, robust infants as well as in those who were delicate. The temperature usually touched the highest point upon the third or fourth day of life. In about two-thirds of the cases the temperature did not rise above 102° F. In nine of the above cases the temperature was 104° F. or over, the highest recorded being 106°. The duration of the fever was usually two or three days. The fall was generally quite abrupt, although not always so. Daily weighings made in these cases showed that the infants continued to lose weight while the fever lasted, and that the loss almost invariably exceeded by several ounces that of children who had no fever. The maximum loss noted was twenty-eight ounces. In quite a large number of cases it exceeded twenty ounces; the average loss among healthy infants being ten ounces. As a rule the infants began to gain in weight as soon as the temperature remained at the normal point but not until then.

The symptoms presented by these infants were a hot and dry skin, marked restlessness, dry mouth, and a disposition to suck vigorously anything within reach—everything indicating great thirst. With a very high temperature there was considerable prostration and weakened pulse. In the milder cases there was only unusual restlessness and crying. The rapidity with which the symptoms disappeared when the children were nursed or fed was striking.

It is important that this fever should be recognized, even though the symptoms are not generally severe, as the extra loss of a quarter or half a pound during the first week is a serious handicap to a newly born infant, and one, the effects of which may last for more than a month. We now make it a rule to take the temperature of every newly born child during the first week. All the usual local causes of fever are first to be excluded by a physical examination. This fever can hardly be confounded with pyogenic infection, for that rarely begins before the fifth or sixth day.

The treatment is simple, viz., to give water regularly every two hours in quantities up to an ounce at a time if required by the thirst of the child. This should be done in every case where the temperature reaches 101° F. In case the temperature does not at once begin to fall, the infant should be put upon another breast, or artificial feeding should be begun. Examination of the breasts from which the child has been nursing will usually reveal the fact that the secretion of milk is very scanty, and often that it is entirely absent.

Such fever from withholding of food and drink I have occasionally seen in older infants, usually in those who are nursing dry breasts, or where fluid food and water have been withheld because of some gastric disturbance. It yields as promptly to treatment as does the same condition in the newly born.

DISCUSSION.

Dr. W. S. Christopher: I have noticed cases of this kind frequently, and am not convinced that the fever is due to inanition. It is frequently due to urinary trouble. I have often seen these children pass masses of urates and uric acid. I have seen a child who has been deprived of all fluids, previous to the commencing of kidney secretion, suffer from fever and great pain. On giving fluid, the pain would cease; there would be a washing out of uric acid masses and cessation of all symptoms. It is not out of place, I think, to consider, in connection with this subject, the old custom of giving teas to babies. It provides the fluid necessary to make the secretion; the heat employed secures the sterilization of the fluid.

Dr. A. Jacobi: I am fully of the opinion just expressed by Dr. Christopher. In the previous remarks the urinary organs were lost sight of. The condition spoken of is frequently found in older children, and may be compared with that found in adults, when no water is taken, and perspiration is going on rapidly. Not only will the weight fall, but other symptoms, like headache, will set in, with some rise of temperature, which will easily be cured by administering water. In the newly-born, a rapid change is taking place, not only in the circulation, but in general metamorphosis, and the introduction of water will give just such results as Dr. Christopher has described. Thus uric acid infarction may give rise to nephritis. I have seen nephritis in babies of from four to eight weeks old. The formation of stone will easily take place from such infarctions, when there is not sufficient water given.

Dr. J. P. C. Griffith: These cases are exceedingly interesting, and need further explanation. There does not seem to be a good reason for calling it inanition fever; older children are likely to have a low temperature with inanition.

Dr. W. D. Booker: These fevers are probably due more to disordered digestion than to want of nourishment. The stomach of the newborn is unaccustomed to irritation of foreign substances, and even a very small quantity of breast-milk may be sufficient to excite slight inflammatory conditions with indigestion, which in the unstable state of the heat centres at this time, may cause considerable change in the temperature. During the past winter I saw a child who was placed to the breast, at proper intervals, from the first day, but was never satisfied, and cried a great part of the time. Small quantities of sterilized cow's milk and water were given, but it afforded no relief. On the fourth or fifth day the temperature rose to 103° F., and in the night reached 106° F. The navel was clean, and had a healthy appearance, and no source of suppuration could be found. During the next forty-eight hours the mother's breasts were relieved at regular intervals with the breast pump, and the child was fed from the breast of a mother in the neighborhood, who was nursing a three months' old child. During this time the fever entirely disappeared, and the child was again restored to its mother's breast, on which it began to thrive, and soon regained the previous loss of weight. It is difficult to say how much bacteria may be responsible for these troubles, but it is probable that they occur too early in life to be the result of the activity of bacteria.

Dr. L. Emmett Holt: The point I had in mind, was that these cases should be distinguished from septic disturbances of all kinds. I do not like the term "inanition fever," myself, but know of no better one. Dr. Griffith spoke of low temperatures in marasmus in older children.

Those are chronic cases, while these are acute. As to the loss of weight, I think Dr. Rotch must have misunderstood me. All children, of course, lose in the first few days. I wished to call attention to the fact that in these cases the loss is excessive, and that this loss means something. I think we should have the child's temperature kept, as well as the mother's, and give food, or at least water, to every child with a temperature above normal.

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Toxic Effects of Thyroid Feeding—Beclere presented to the Medical Society of the Hospitals, Paris, a patient illustrating the cure of myxœdema by thyroid therapy. During the course of her treatment, she accidentally took a large quantity of thyroid gland—92 grains in eleven days. At the end of this time she had developed such symptoms as tachycardia, pyrexia, insomnia, tremor of the extremities, exophthalmia, polyuria, albuminuria, and glycosuria; in fact, a complete picture of Basedow's disease. The writer, therefore, concludes that the latter disease is due to a hypersecretion of the thyroid gland, which may be caused in more ways than one.—*Med. and Surg. Reporter.*

Neglect of Vaccination in Italy—During the recent small-pox incidence, it was noted that an undue proportion of cases occurred among the Italian contingent of the population. The experience of Dr. James Leishman, surgeon of the steamer *Scandia* of the Anchor Line, throws some light on the cause. He says: "In 1894 I examined over eight hundred Italian emigrants for vaccination according to American law. I regret I did not retain exact figures of results, but many men even of military age had somehow escaped, and more women, while fully half of the children had no marks. On my last voyage, out of 100 children I had to vaccinate over sixty. The figures would be more unfavorable if I could substract those vaccinated just previous to the voyage, and those who preferred doing it at home. I was more than surprised to find it is supposed to be universal. These were mainly peasants from the southern half of Italy. While I am writing, I may say that Scandinavians are very carelessly vaccinated, many who have certificates showing no marks; Scotch are rather better, German and Irish are far superior and practically perfect. The Italian lymph is excellent. Other ship surgeons I have no doubt could corroborate me."—*Jour. of American Med. Association.*

SOME PHYSIOLOGICAL FACTORS OF THE NEUROSES OF CHILDHOOD.

BY B. K. RACKFORD, M.D.,

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X.

Excessive Nerve Activity.

There is a well-grounded and wide-spread medical opinion that excessive nerve activity (the term including brain work and nerve excitement) is an important factor in the production of nervous disease in children, but notwithstanding the prevalence of this belief among medical men, very little has been done to educate those who have the rearing and tutorage of the young on this subject, which, I believe, is one of almost vital importance to the state itself.

It is a fact which should be heralded everywhere that the vast army of neurasthenics and hysterics which now inhabit our cities, is yearly being increased by subjecting the immature nervous systems of young children to the almost constant excitement, strain, and mental activity with which our social order has surrounded them. An all important question, therefore, to pediatrists, who should be especially interested in making of the child the strongest possible man, is, How can these influences, which are playing such havoc with the nervous systems of children, be guarded against? How can they be counteracted? How can parents, guardians, nurses, and teachers be made to comprehend the importance of this subject?

If these questions are to be answered; if the campaign against the evil of constantly subjecting children to the nervous strain resulting from the artificial conditions which obtain in all cities, is to be, in any degree, successful, then the whole subject must be placed upon a more exact physiological basis than it has ever been before, so that those who have charge of the young may be told not only that nervous strain is an important cause of neurotic disease, but they may also be told why this is so. And in the series of papers which this chapter concludes, I have attempted to outline some of the physiological facts by which this goal is to be approached.

The teachers and guardians of the young must be told that the nervous system of the child differs very materially from the nervous system of the adult; they must be told that the child, especially in his nervous organization, is not a *little man;* that his nervous system is structurally and functionally immature; that it is excitable, unstable and under feeble inhibitory control; that the sources of reflex irritation in the child are many, and that the nerve centres discharge their force more fitfully and readily than in the adult; that the period corresponding with the onset and establishment of the reproductive function in girls is a time when they are especially predisposed to nervous disease. And they must also be told that these, and other physiological peculiarities of the nervous system of childhood, are made much more potent for evil when they are associated with the various "blood conditions", which in previous chapters, I have shown to be etiologically related to the neuroses of childhood.

In order to approach this subject in a physiological way, I shall call attention to a recent very extensive research by Dr. Wm. Townsend Porter, which has, I believe, great practical importance in the study of the influences of school life in producing the neuroses of childhood.

Dr. Porter demonstrated that children who are advanced in their studies, are, on the average, heavier, taller, and of larger girth of chest, than less advanced children of the same age. Thus, boys aged eleven, were found in Grades I, II, III, IV, V and VI, of the St. Louis Public Schools. The average weight of the four classes was respectively 64, 66, 68, 71, 72 and 74 pounds. The ability to succeed in school life is, in the average, a measure of mental power, and if successful scholars are, as a rule, better developed physically than the less successful, it follows that mental ability is, in the average, greater in large children than in small children of the same age.

Dr. Porter makes a practical deduction from the law thus established. The entrance to any grade in a graded school system is guarded by examination, and the children found in that grade are such as have passed the entrance examination, and have, in this way, shown their capacity to do the mental labor exacted in this grade. The greater number of these children are of the same age. The work of this grade is, then, normal for this age, and the average height, weight and girth of chest of this age, form the physical development most often found in children able to do the work of the grade. No child younger than the average age of any grade should be permitted to enter it, until a physical examination has shown that his strength shall probably be sufficient. In determining this, the relation of weight and girth of chest to height is of special importance. Abnormal height is undoubtedly a disadvantage, yet such children may be strong, provided their physical development is in proportion to their height. If the contrary is the case, the child will be much less able to resist the strain of school life.

Dr. Porter points out the importance of frequent weighing of growing children. Persistent loss of weight in an adult is a matter of grave concern. The failure of a child to make the normal gain in weight is no less grave, and should lead to an inquiry into his school tasks, for the effects of prolonged overwork are very serious in children, and often irremediable.

It is my belief that if there was a rule, such as Dr. Porter suggests, guarding every grade in our public school system by a physical as well as a mental examination, it would prevent the development of a considerable portion of the neurotic disease, which is now so prevalent among school children. With children of good physical development, working in the public schools within the limitations of their proper grades, there is almost no danger that a moderate amount of school work will in any way assist the development of neurotic disease, provided always that the hygienic conditions of the school, especially the light and ventilation, are good. But the strain of ordinary school work is a very different matter with children of poor physical development, many of whom are, unfortunately, precocious. A large number of these children, by reason of bad heredity, are neurotic, poorly nourished, and anæmic, and many of them have tuberculous, rheumatic or syphilitic inheritance, while others, from accidental causes, such as bad hygiene, improper food, etc., are below the normal in physical development. The nervous systems of such children are in a condition of malnutrition, and are, therefore, not capable of doing the ordinary work of their grades in the public schools, and if they are permitted to do this work, or if, as is often the case, these children are encouraged to push on into higher grades than the one to which their years and strength should assign them, disastrous consequences will surely follow, and their nervous systems may be injured beyond repair.

These children, under the mental strain of school work, may develop chorea, hysteria, and other neuroses. The important duty, therefore, of every physician is to advise against much school work in children of feeble physical development, and to explain to parents and teachers why such children as these should first have their physical defects looked after, and should then be placed in a grade lower than that to which their age and intelligence should assign them.

It is my belief that a normal dwarf, with no bad hereditary influences behind him, may, without injury to himself, keep pace in mental development with fellows of his own age ; the dwarfish body is not of itself an indication that school work might be injurious, if there is every other evidence of perfect physical development. Dwarfishness of body in school children of good physique does not mean dwarfishness of mind. But dwarfishness among children, as indicated by weight and chest development, is, as a rule, the result of disease and bad heredity, and this is the reason why children who are under weight and have poor chest development, are, as a rule, incapable, without injury to their nervous systems, of doing the same amount of school work as their fellows of the same age. It is my belief, therefore, that the physical basis of precocity and dullness in children depends upon the facts that bad heredity and disease are the chief causes of abnormal dwarfishness or poor physical development in the young. It is also my belief that children of this class are, as a rule; anæmic and poorly nourished, and that their nervous systems are therefore in a condition of malnutrition, and not capable of doing an amount of work in keeping with the age of the child.

The reasons, then, are clear why we should not allow a child of poor physical development to be pushed to rapid brain development. If we do, their nervous systems will surely suffer from the strain, and whatever predisposition they may have to neurotic disease will be greatly increased. In dealing with individual cases, it will be of the utmost importance to the physician to know the child's heredity ; if the child has a bad family history, it should be the imperative duty of the physician to protect it against mental overwork. We cannot, of course, change the child's ancestry, but we can speak out against the crime of pushing children with hereditary physical defects to rapid brain development. and in this way *developing an hereditary nervous weakness into actual disease.* School work may therefore be classed as a cause of neurotic disease in children of poor physical development, and it acts chiefly in calling out hereditary defects of the nervous system. In speaking of school work as a cause of neurotic disease in children, it must be understood that this term embraces not only brain work, but also the mental excitement which attends examinations, and the eye strain which results from imperfect vision and bad light, the latter being one of the most common causes of reflex nervous disease in children, and one of the physical defects which should be promptly removed.

It must be remembered that what is here said of the physical basis of precocity and dullness is a matter of proof, and not of opinion, and that it applies to children only, and has nothing whatever to do with the question of whether, in adult life, a healthy body adds strength and capacity to the nervous system.

In this demonstration of the injury which results to the nervous system of the delicate child from the nervous strain of school life, we have a most important warning against the pernicious habit of encouraging mental precocity in early childhood. It is a matter of almost daily experience to see a poorly nourished tuberculous child brought forward for the purpose of demonstrating its "wonderful" precocity. The proud mother and over zealous nurse commence the process of mental cramming even before infancy has passed into childhood. From this time on, children are daily being taught, apparently, with the idea of destroying their childhood, and making of them little men and women. And this unphysiological process is not infrequently a factor in the production of the nervous disorders of late childhood, puberty, and adult life. Mothers must be told that *early precocity is an abnormal condition in the human infant,* which, if encouraged, may result in actual disease and permanent mental impairment. They must be told that *vegetation* is the ideal life of infancy and early childhood. Look to the physical, and retard the intellectual development of the child. It must not be taught, it must not be trained. It must have plenty of exercise, fresh air, proper food, and, if possible, a large portion of the year should be spent in the country, away from the clamor and excitement of city life. In the country also, the child can have a certain amount of solitude, the importance of which can scarcely be overestimated in giving independence of thought and character to the future man.

It is my belief that the nurse and the governess in the modern home are doing much to destroy the development of individuality in children. The modern child has some one to do his thinking, some one to minister to his every want, and is almost constantly being trained. He has no time to himself, and a very small portion of his day is spent in play with his intellectual equals. If there is one crying evil common to all of our large cities it is the absence of play-grounds for children, and the attention of humanitarians should be called to this fact. If our generous citizens would pause long enough in the building of hospitals, libraries, and places of learning, to realize that there is a field almost totally neglected by the humanitarian, and one of as much importance to the welfare of our communities as the building of hospitals, libraries, and institutions of learning; then possibly a portion of the vast sums of money annually spent in this way would be spent in providing play-grounds for children. These play-grounds should not be covered with beautiful grass plots, guarded by policemen, but they should be play-grounds in the best sense of these words, places where ball, tennis, and all kinds of healthful sport could be enjoyed. And I believe the day is not distant when the physiological importance of the physical, as opposed to the mental development of children, will be so generally recognized that some philanthropists will prefer to hand their names to posterity associated with "play-grounds," rather than with fountains, art museums, music halls, and other worthy enterprises.

323 BROADWAY.

THE CARE OF THE NEWBORN.*

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The question of the care and management of newborn children has for so long been relegated to ignorant mothers and nurses, that a consideration of the subject by medical men is opportune. The writer for this reason has chosen for the subject of a paper a few practical points bearing upon the newborn, as well as because, too often among the profession, there are many who leave all the care, feeding, and clothing of children to those wholly incompetent to undertake the task, without seeking to instruct them as to their duties.

If I shall have impressed a few practical points upon you, chosen from a field necessarily so vast, I will feel well repaid. The taking of the newborn from the hands of the grandmother, with her traditions and superstitions, will meet with strenuous opposition in the majority of instances, but advice must be given upon the points which affect the well being of our infants, and it is the duty of the physician to see that it is carried out.

Umbilicus—The dressing and care of the umbilical stump is but briefly mentioned by writers upon obstetrics and pediatrics, and it is considered of so little importance as to be left entirely to the care of old women and nurses, whose usual treatment is to dress it with an old greased cloth, in which a hole has been burned for the passage of the stump, the burning according to them seeming to possess special efficacy.

The danger of septicemia threatens every newborn child through the medium of the cord. We know that tetanus, erysipelas, and diphtheria occur in the young infant, the infecting organism gaining entrance through the cord. According to J. Lewis Smith, "Septic diseases of the newborn can in every case be traced to carelessness or to the dirty dressing of the cord." T. Mitchell Prudden (American System of Obstetrics, Vol. 2, pp. 728–9), found in a number of examinations of bodies of children dying at the New York Infant Asylum, that the microscopic examination of the umbilical stump showed great numbers of bacteria in the umbilical vein, and in the surrounding tissues. Nicolaier and Eserich have shown that tetanus nascentium is a traumatic, infectious disease of the navel.

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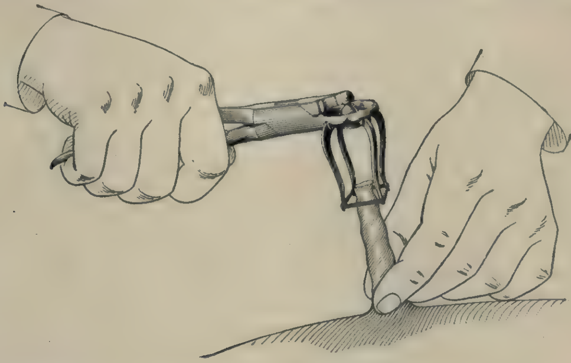
* Read before the Kentucky State Medical Society, Harrodsburg, June, 1895.

Allen, in the *American Journal of Obstetrics*, recommends a rather complicated but thoroughly satisfactory treatment of the cord. This consists in the careful application of glycerine to an aseptic umbilical stump, it being frequently renewed. The cord should be tied in two places, about one inch apart, with a strong ligature which has been previously sterilized, extra care being exercised in tying those cords which contain a large amount of Wharton's jelly, as the shrinkage of this may cause the ligature to slip, and a dangerous hemorrhage ensue. An instrument which has recently come to my notice is an Elastic Funis Band Applicator. With it a three-sixteenth elastic band is placed on the cord, and according to the inventor, Dr. Kellogg, of Wisconsin, accidental hemorrhage is made impossible. The band is stretched by placing it upon the free ends of the closed prongs and compressing the handles. It is then carried over the cord—previously cut—the pressure on the handles is relaxed, and the instrument is readily withdrawn, leaving the band in position.

In a hundred and seventy-six births occurring under my observation, of which I have a record; the average time for the separation of the cord was six days, and in all of these cases, after thorough cleansing, a powder consisting of boracic acid and salicylic acid, in equal parts, was applied to the stump upon sterilized absorbent cotton. At each bath, the stump was cleansed and the powder re-applied on a fresh piece of cotton the stump was then laid upon the abdomen, and a snug but not tight binder applied to hold it in position. Under this treatment the stump rapidly mummifies, and there is no moist or fungus navel left. At no other time is a binder of any use, and so soon as the cord separates it should be removed and not replaced. Instead of preventing hernia as it is taught, the binder is a frequent cause of it merely by mechanically forcing the abdominal contents down into the pelvis, and I have never seen a binder, no matter how scientifically applied, which will stay in position twelve hours, without requiring frequent readjusting. If the child is born during the winter months, the binder which holds the cord can be replaced by a knit binder, which, applied very loosely, merely acts to protect the abdominal contents from cold.



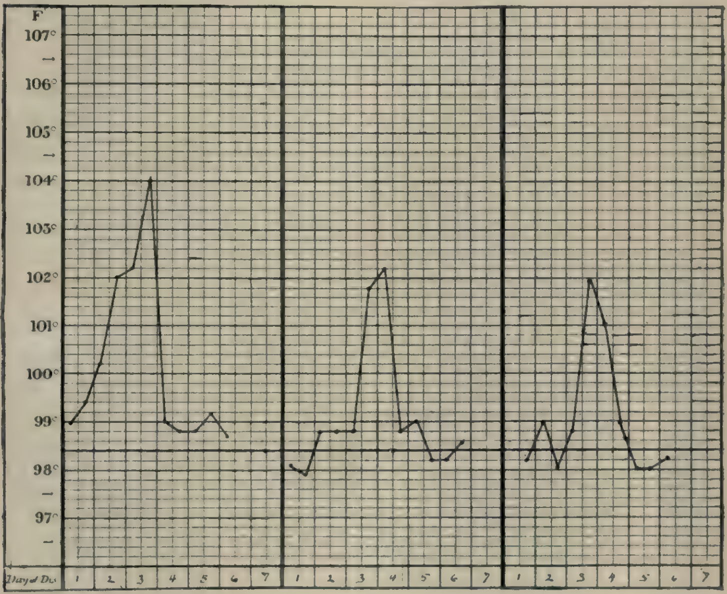
Eyes—The fact that a number of States have passed laws with a view to decreasing the number of cases of blindness due to ophthalmia neonatorum, shows in what a light this dreaded but preventable disease is held by progressive States, and it behooves this Society, as the representative medical body of Kentucky, to recommend to our legislative bodies, the enactment of laws similar to those existing now in Missouri, Maryland, and other States, looking to the prevention of blindness in infants. These laws have reference, however, particularly to ophthalmia neonatorum, occurring in children who have not had the advantage of medical attention, but it is the duty of every medical man to institute such precautions as may prevent ophthalmia, and in the Credé method we have an efficient preventive remedy. It is true antepartum ophthalmia neonatorum does exist, and, as has been shown, is but little, if any, affected by the Credé treatment; but it is of such rarity as to perhaps never be seen by the average practitioner. Friedenwald (*Medical News*, Vol. lxvi., No. 10) has been able to collect but eighteen cases from the literature upon the subject.

As the infection generally occurs during the passage of the child's head through the vagina, and the period of incubation is rarely more than twenty-four hours, the instillation of one or two drops of a two per cent. solution of nitrate of silver into each eye, immediately after birth, will in the great majority of cases suffice to prevent this dread trouble.

That the Credé treatment is effectual, may be instanced the record of the Sloane Maternity Hospital, New York (Mittendorf). In 4,300 births, the mothers being drawn from every walk of life, not a single case of ophthalmia neonatorum developed, the Credé treatment being used in every case. It was the writer's privilege to be present at two hundred of these births, and the rapidity and ease with which this treatment is carried out, recommends it for general adoption. Should an excess of the silver solution be used, a little saline solution will suffice to neutralize it.

Feeding—It is hardly necessary to state, that unless some physical condition precludes, all infants should be given nature's food—mother's milk. Immediately after birth, the child should be anointed thoroughly with vaseline or olive oil, not with lard on account of the salt which it contains, then wrapped in a shawl or blanket, and laid away for at least twelve hours, before it is bathed and dressed and given to its mother for the first nursing. During the first six hours the cord should be examined frequently for hemorrhage. The danger of subjecting the infant to the double shock from exposure after being born into a temperature much lower than that maintained in the uterus, and that following removal from the water of the bath, are sufficient reasons for delaying the toilet of the child; and the fact that the mother needs rest after her trying ordeal, for postponing the first feeding.

It is now during the first few days of life, that we must teach the child regularity of habits, and this cannot be better begun than by adopting regular hours for nursing, namely, every two hours during the day, from 6 A M. to 10 P.M., and every four hours during the night. By this means not only will the child be taught regularity, but the breasts will be more active at the regular nursing period. If there is a good flow of milk, the contents of one breast will suffice for a feeding, otherwise both breasts must be nursed from at each time, allowing twenty minutes for a feeding. The practice of using the breasts for quieting the child upon all occasions of fretfulness and restlessness cannot be too severely condemned.



The child's temperature should be taken for at least one week after birth, twice daily. Should the child be getting an insufficient quantity of milk, it will have an elevation of from one to four degrees of temperature above normal. My attention was first called to this phenomenon while an interne at the Sloane Maternity Hospital, New York City, by the resident physician, Dr. E. A. Tucker, who has aptly called it "starvation temperature." In the average case it occurs on the third or fourth day, the child is perhaps restless and fretful, its mouth is dry and red, and the temperature reaches 102° or 103°. If given an artificial feeding, or is nursed, the temperature will fall to normal almost immediately (see charts, page 579).

If the child is fretful it should not be given sage or saffron teas and other concoctions, but its temperature should be taken, and if above normal, it should be fed artificially until the mother's breasts begin to secrete. The fact of the occurrence of the starvation temperature is very seldom recognized, but a test of it will show how true it is.

Weighing—A valuable means of ascertaining the progress of a child, which is too often neglected, is regular weighing. A child, from birth to six months of age, should be weighed weekly, as by this means almost to the exclusion of all others, we can tell how the child is developing. During the first week there is generally loss in weight, but by the end of the second week the child should have regained its birth weight, and if there is a gain of less than four ounces weekly, or a stationary weight, we know there is some fault with its nutrition, either in the quantity or quality of the milk, which it receives, or its power of assimilation.

As a means of ascertaining the quality of mother's milk when it is suspected to be at fault, I wish to recommend and exhibit an apparatus devised by Dr. L. Emmett Holt, of New York. It was the writer's pleasure to make some two hundred and sixty examinations of breast milk by this method, in which the progress of the child and the condition of the milk tallied in every instance.

As you see, the apparatus consists of a lactometer and of two graduated glass stoppered tubes. A specimen of milk is obtained from the middle of a nursing, the specific gravity is found at a temperature of from 65 to 72 degrees Farenheit, about an ounce being needed for the examination. For the cream test the tubes are filled to the top mark, and at the end of twenty-four hours the amount of cream is read off, each degree being one per cent. It has been found by repeated examinations that normal milk should have a specific gravity of from 1028 to 1031, with from seven to twelve per cent. of cream.

A newborn infant's stomach has on the tenth day only a capacity of 2.5 ounces by weight, according to experiments made by the writer at Sloane Maternity Hospital, (ARCHIVES OF PEDIATRICS, May, 1893), and that if artificially fed this amount should not be exceeded during the time when starvation temperature occurs and artificial feeding is required.

Mouth—An important precaution to prevent thrush or sprue, is the regular cleansing of the child's mouth before and after each nursing. This is quickly and efficiently done by means of a cotton swab on the finger wet with a saturated solution of boracic acid, the natural enemy of the oidium albicans. The washing after nursing removes most of the milk left in the mouth, and the washing before nursing serves the double purpose of protecting the child's mouth and the mother's breasts from infection through a fissured nipple, should one exist.

Buttocks—Instructions should be given as to the proper care of the buttocks, for should an erythema intertrigo develop, it is through the carelessness of the attendant that it occurs. The acid meconium, if allowed to stay for any length of time in contact with the delicate skin of the buttock, soon macerates it and an intertrigo develops. Regular washings of the buttocks and adjacent parts with clear water and a soft cloth, which should then be dried carefully and powdered with equal parts of boric acid and starch or talcum powder, will suffice generally to keep the parts free from trouble. Many cases of intertrigo, when developed, are prolonged by the habit, so prevalent, of using napkins which have been dried before the fire instead of washed.

Circumcision—I wish to enter a protest against the custom of universal and indiscriminate circumcision of male infants. In the vast majority of instances, if the toilet of the penis be attended to by the physician, the necessity for circumcision after several months will be obviated. It should be the duty of the attending physician to reflect the prepuce of all male children when they are a month old, relieve the corona glandis of the smegma present, anoint it with olive oil or vaseline and replace the foreskin. This should be repeated two or three times a month by the mother, and the parts cleansed. By this means there will be no pin hole openings, and no reflex symptoms generally attributable to phimosis.

Breasts—Should milk accumulate in the breasts of infants, it, as a rule, needs no treatment, save perhaps the application of a plaster mull of zinc oxide or belladonna ointment.

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Septic Ostitis in Childhood—Mr. Edmund Owen (*Lancet*) considers the acute inflammation of the diaphyses with relation to the early diagnosis, and its differentiation from acute articular rheumatism, with which it is not uncommonly confounded. It usually begins with a chill, followed by fever and local inflammation, swelling, and pain; and if allowed to continue, becomes an extensive osteo-myelitis. There is usually a spot of elevation, with an area of redness, but this differs from acute articular rheumatism, in that the heat, swelling, pain, and tenderness are close to the articular area, but do not involve it, at least not at the first. The tenderness is limited to the region of the bone close below the junction of the cartilage, and at this particular point there is a definite thickening. Another point which sometimes misleads in early diagnosis is, that two parts may be simultaneously affected.

RUPTURE OF THE BLADDER.*

BY JOHN DORNING, M.D.,

New York.

About 5 P.M., on October 17th, 1891, C. W., æt. twenty-two months, while playing in the gutter, was thrown down by the wheel of a slowly moving wagon. It was ascertained that the wheel did not pass over him. He was carried home, and within fifteen minutes was seen by two local physicians. It was said that he did not appear much the worse for his mishap, so a simple mixture was prescribed.

The next morning, October 18th, I first saw the child. He was then somewhat restless, and appeared to be slightly distressed. The pulse was 90, small and thready; the temperature $99\frac{3}{5}$° F. The abdomen was distended and tympanitic, but not painful on pressure. The right inguinal region was slightly tender on pressure and presented some ecchymoses. This ecchymosis extended down to the perineum beside the scrotum, but did not involve the scrotum. The perineal region was a little swollen. He had passed no urine since the accident, sixteen hours previous. I examined for fracture of the pelvic bones, but detected neither displacement nor crepitus. I inserted a catheter into the bladder, and obtained two ounces of clear urine. An hour later, during an evacuation of the rectum, he voided one ounce of clear urine. I suggested the probable necessity of an exploratory operation. This was not entertained by the parents.

Six hours later a consultation was held. The temperature was $99\frac{3}{5}$° F.; the pulse was 90, of good character and full, due to stimulation; the general condition was about the same. I drew two ounces of clear urine with the catheter. Three quarters of an hour later I gave an enema to relieve tympanitis. With the return of the enema he voided about one ounce of clear urine.

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*Read before the American Pediatric Society, Virginia Hot Springs, May 28, 1895.

At 10 P.M., the temperature was 100° F.; the pulse 102, small and thready. The child was a little more restless, the tympanitis more marked. I advised operative interference, which was refused.

October 19th, 10:30 A.M.—The temperature was $104\frac{2}{5}$° F.; the pulse, 180. The hands and feet were cold, the features pinched. Tympanitis increased. Two ounces of urine were obtained with catheter. At 3 P.M. the child died.

Autopsy—The fundus of the bladder on its posterior aspect presented a tear a half inch long. About four ounces of urine was found in the pelvic cavity. There was but slight evidence of beginning peritonitis. There was a fracture of the ramus of the ischum, without displacement, on the right side. There was also fracture, without displacement, of the angles of the third, fourth, fifth, sixth and seventh ribs.

252 WEST TWENTY-FIFTH STREET.

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Dr. Samuel S. Adams has been appointed to the chair of Diseases of Children in the University of Georgetown, a full professorship having recently been created. Dr. Adams lectured on that branch at Georgetown from 1879 to 1884, and now resigns as Professor of Clinical Pediatrics in Columbian University to accept this higher honor from his *alma mater*. The University of Georgetown is to be commended for its wisdom in establishing a full professorship upon so important a subject, and is to be heartily congratulated upon securing so competent a man to fill the chair.

Laparotomy on an Infant—A. Lindh was called upon to treat a child of five months suffering from vomiting and exhaustion. No feces were passed, but considerable blood was discharged through the anus after enemata were administered. The abdomen was soft, but not tender. The patient cried incessantly. Upon opening the abdomen, invagination of the ileum and colon as far as the descending colon was found, and reposition effected after some manipulation. There were no adhesions. Feces were immediately passed after the administration of clysters, and recovery took place rapidly, though gangrene occurred on one of the borders of the incision.—*Lakäresallskaps forhändlingar.*

CEREBRO-SPINAL MENINGITIS IN AN INFANT SIX DAYS OLD.*

BY T. M. ROTCH, M.D.,

Boston.

A female infant born February 21st, and weighing eight and three-quarter pounds was apparently healthy and remained so until it was six days old. It then refused to nurse and what little it took was vomited. It cried out when asleep, and at times would awake with a sudden start. The temperature in the afternoon was 104.2° F. and she cried almost all night. The next morning, February 28th, the temperature was 101.6° F. At 5.10 A.M. she had a convulsion and another at 6 A.M. She was then quiet and nothing abnormal was detected until 10 A.M. when she had a number of convulsions. These convulsions continued all night. On the following day, the convulsions continued. The temperature remained between 101° and 102° F. In the afternoon on careful physical examination nothing abnormal was detected ; between the convulsions she seemed perfectly well. The convulsions were clonic and general. She remained in this condition until 1 P.M. when she was noticed to be somewhat cyanotic, but later, at 4 P.M. the color was good and she seemed well and comfortable. The convulsions, however, returned at 4.15 P.M., lasted about two minutes, and at 4.25 she had another convulsion and died.

Summary—An infant born healthy and remaining perfectly healthy for six days, began to have convulsions on the seventh day, and after having fifty convulsions, died on the eighth day of her life.

The post-mortem examination was made by Dr. W. F. Whitney eighteen hours after death. The report was as follows : Rigor mortis well marked. Lividity of the dependent parts of the body in small separated patches over the legs, arms, and chest.

Head—Calvaria presented nothing abnormal. The inner surface of the dura mater was covered with opaque yellowish patches, the lymph especially marked over the base of the skull. The vessels of the pia mater were markedly injected and the meshes of the pia mater were filled with an opaque greenish-yellow purulent exudation. This extended over the entire brain and into the spinal canal. Microscopic examination showed the presence of large micrococci usually associated in pairs, two of which were sometimes united with a chain of four (pneumococcus).

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* Read before the American Pediatric Society, Virginia Hot Springs, May 27, 1895.

Heart—The heart was normal and its cavities were filled with dark fluid.

Lungs—The lungs were not fully retracted, and were engorged with dark blood which was so abundant as to suggest extravasation into the alveoli. The pleura surfaces were perfectly smooth.

Abdominal Organs—The spleen, liver, and kidneys were markedly injected with blood but were otherwise normal. The stomach and intestines presented nothing abnormal,

Pathological Diagnosis—Acute cerebro-spinal meningitis. General venous congestion.

It is well known that in young infants the symptoms ot cerebro-spinal meningitis, may be merely a heightened temperature with clonic convulsions, and that the diagnosis cannot be made during life from the various forms of reflex convulsions which may occur at this age, and cerebro-spinal meningitis can only be suspected.

In this infant the onset of the attack followed a period of extreme nervous excitement in the mother who was nursing it, and when I saw it in consultation with Dr. W. L. Richardson, it seemed possible that the convulsions were of a reflex form such as might follow from disturbance in the breast-milk. The absence of retraction of the head, opisthotonos, any abnormal symptoms connected with the eyes, and the perfect tranquility and apparently healthy condition of the infant in the intervals of the convulsions, made the supposition of the convulsions being reflex still more probable. Cases of this kind should be put on record in order to warn us that a most guarded prognosis should be given in all cases of infantile convulsions.

197 COMMONWEALTH AVENUE.

Hemiplegia with Epilepsy Treated by Trephining—At a meeting of the Medical Society, of London, Dr. Outterson Wood and Mr. Cotterell showed two patients who had been afflicted with right hemiplegia and epilepsy, who had been treated by trephining. The first patient, a female, aged three years, was paralyzed on the right side. When one year old she had a fall, and afterward had an epileptic seizure; several more fits followed, always beginning in the thumb and fingers. She had been trephined over the centre of the hand, and there had been no return of fits since the operation. The second patient, a girl, aged twelve years, had been paralyzed since birth. There had been a difficult instrumental labor. There was no paralysis in other children of the same family. There was rigidity of the right hand, arm, and leg, with wasting of the leg and eversion of the foot. Epileptiform seizures commenced last April, preceded by a well-marked aura of numbness and tickling of the thumb. She was trephined over the hand centre last September, and since then there had been no fits; the hand and arm were less rigid, and she walked better. In the first case a cyst was found connected with the arachnoid, which was probably an old hemorrhagic extravasation. In the second case, the dura mater was found to be thickened, but the arachnoid and brain were healthy.—*The Lancet.*

Sulphurous Deposits on the Cannulas and Tubes used in Tracheotomy and Intubation—The *Journal de clinique et de thérapeutique infantiles* publishes an article by M. Cochinal, who writes that in the pulmonary complications of diphtheria the breath is very often fetid and all who come near the patient have been able to observe that the cannulas and the tubes introduced into the trachea were covered with a distinctly black deposit. This deposit was seen on the silver cannulas as well as on the metallic tubes employed in intubation. Acting on M. Variot's advice, the author made an analysis of the composition of this black deposit and found that it was formed by a sulphide.—*N. Y. Medical Journal.*

PYOPNEUMOTHORAX.*

BY WALTER LESTER CARR, M.D.,

New York.

James Cosgrove, aged ten months, was brought to the Out-patient Department, St. Mary's Free Hospital for Children, on November 17th, 1894. The baby's mother said that he had fever and a hacking cough for about two weeks. He had been restless, and had moaned as if in pain. There had been a loss in weight, but the baby nursed as usual, except that he took the breast more often and would nurse only a short time.

Examination—*Inspection*—Respiration is oppressive and rapid, 80 times a minute. The right chest appears rather fuller than the left, though there is no bulging of the intercostal spaces, and there is no actual difference by measurement. The movements of respiration are almost entirely abdominal. The left chest moves more freely than the right. There is a tumor in the fifth intercostal space of the right side that extends from the axillary line to the angle of the scapula. The skin over the prominence is normal. The veins of the back are distended.

The visible area of the cardiac apex is not displaced.

Facial expression indicates pain. There is great activity of the alæ nasi. The mucous membranes are a good color, and the extremities are not cold.

Palpation—Nothing of importance is to be elicited by palpation, except that the heart's apex is not to the left of its normal position.

Percussion—Anteriorly on the right side the note is tympanitic to the lower border of the eighth rib. Hepatic dulness extends three inches below the free border of the ribs on the mammillary line. In the axilla and back to the scapula there is slight dulness on light percussion from the sixth to the eighth rib. Close to the spine percussion is not so resonant. Over the tumor the note is tympanitic. The left lung is extra resonant.

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* Read before the American Pediatric Society, Virginia Hot Springs, May 27, 1895.

Auscultation—There is absence of normal respiratory sounds on the right side. Amphoric breathing is to be heard anteriorly and as far back as the middle of the scapula. Posteriorly there is indistinct bronchial breathing between the scapula and the spine. Friction sounds are heard over the base of the right lung. Pressure on the tumor increases their number and produces creaking and the large crackles of emphysema. The same condition supervenes with an attack of cough. It is impossible to produce succussion and metallic tinkling. There is exaggerated respiration over the left lung.

The pulmonic second sound is intensified.

Temperature 101° F., in the rectum; pulse, 160; respiration, 80.

The mother was not willing to allow of any operative procedure, and as the baby was only ten months old, and under every disadvantage of bad hygiene and little care, it was not advised. Firm pressure was made over the emphysematous tumor by a gauze compress and rubber plaster. After the dressing, the baby was more comfortable and breathed less laboriously.

November 18th—Morning temperature, 100° F., in rectum; pulse, 148; respiration, 50. Evening temperature, 100.4° F.; pulse, 142; respiration, 50. The Sister from the hospital records, that though the baby is weak, he nurses and sleeps well. The cough is loose and there is a free expectoration of an offensive muco-pus, streaked with blood. The purulent discharge is increased by pressure against the chest wall.

November 20th—Temperature last night was 100.4° F., to-day it is 100° F.; pulse, 144; respiration, 52. There is tympanitic resonance on percussion. The movement of right chest is a little better than on first examination. Respiratory sounds are the same as those first noted. Coarse friction sounds are to be heard in the axilla at the base of the right lung, with crepitation over the swelling. Cough is not difficult.

November 22d—Sputa, muco-purulent streaked with blood. Chest movement is easier. Mucous membranes are pale, and anterior fontanelle is depressed.

November 24th—Resonance is vesiculo-tympanitic. Friction sounds are to be heard over the site of the tumor, which is barely perceptible. There is no purulent or bloody expectoration. Baby sleeps well and is improving.

November 27th—There is no evidence of the tumor. Respiratory action is good. The right chest is not extra resonant. There is a dull note at the base of the lung from the axillary line to the angle of the scapula, which is gradually lost within two inches of the lower border. Respiratory murmur is weak. Friction sounds at the base of the lung.

December 6th—Respiratory murmur on the right side is still feeble. General condition is improved.

The sputa were examined by Dr. R. G. Freeman, and found to contain streptococci. No tubercle bacilli were present. There were no fibres or shreds of lung tissue.

It is probable that the baby had an empyema, which had ruptured and discharged itself through the lung. Antedating the pleurisy there may have been a pneumonia.

Owing to the positive refusal of the mother to allow of any operative interference, the management of the case was limited to bandaging the chest and supportive treatment. The baby was given peptonoids, with creosote, and small doses of codeia when unable to rest. Whiskey was administered as required.

In March, 1895, the baby was in good health, and except for friction sounds at the base of the right lung, there was no evidence of disease.

The case is of interest, first, because of the rarity of the disease in infancy, and, second, because succussion and metallic tinkling, which are given in the text books as physical signs of pathognomonic importance, could not be elicited.

There is but little mention made of this subject in the recent works on diseases of children. Koplik, in Starr's text-book, gives a line to it, and states that succussion is important.

Brothers, (ARCHIVES OF PEDIATRICS, March, 1895) could not get tinkling râles or succussion in his patient. There can be no doubt that the two signs of succussion and metallic tinkling may be wanting where the effusion is small and purulent, or where there is plastic exudation.

6 EAST FIFTY-EIGHTH STREET.

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The Care of Young Imbeciles—One of the recognized defects of our highly organized social fabric, is the want of due provision for feeble-minded or idiot children of the humbler classes. Parents sometimes have an exceptional partiality for such of their offspring as exhibit mental defects in a minor degree, and encourage themselves with the hope that the backward little one will improve and grow brighter as years advance. When, however, the condition is more pronounced, and associated with bodily deformity and a total inability to acquire cleanly habits, a heavy burden is laid upon the parents, and serious injury may be done to other children by constant association with the afflicted one. In London ample and satisfactory means are provided for the treatment of these unfortunates through the operation of the Poor-law, and in some lunatic asylums idiots are admitted at a comparatively early age, but on the other hand, there are extensive districts where such measures of relief are unattainable. The necessity for institutions accessible to the imbecile children of the poor has just been impressed upon us by a communication from a correspondent in a Sussex village, describing a painful case, and anxiously inquiring if there is no means of relieving a respectable laboring family of the task of rearing an idiot girl five years of age, who can neither walk nor talk, and requires more attention than the state of the mother's health enables her to bestow. Our correspondent, who sympathises with the parents, has made inquiries in various quarters on their behalf, but hitherto without result.—*The Lancet*, 1895, 3743.

LYMPHO-SARCOMA OF THE SPLEEN.—(CASE AND SPECIMEN.)*

BY GEORGE N. ACKER, M.D.
Washington, D.C.

Charles Hill, colored, æt. eight years, was admitted to the Children's Hospital, September 13, 1894. Mother and father were living and in good health; no other children. The boy never had any of the diseases of childhood. About January, 1894, a large swelling was first noticed on his left side. He also complained of pains in the side, and labored breathing was apparent at times. He never had malarial disease, and the mother could not throw any light on the origin of the growth.

Present Condition—There is a large movable tumor situated in the left lumbar region, extending to half an inch to the right of the umbilicus, and as far down as Poupart's ligament. The lateral measurement is nine inches. The tumor is nodular and very hard and not painful on pressure. It can be moved in any direction. The child is poorly nourished and anæmic. The skin is in good condition—conjunctivæ yellow. The posterior cervical glands are the only glands enlarged. The lungs are normal. The area of cardiac impulse is increased. There is an anæmic murmur over the base of the heart. The urine is normal; the appetite enormous.

A teaspoonful of the elexir of the phosphate of iron, quinine, and strychnine was prescribed, to be taken three times a day, together with five drops of liquor potassii arsenitis. Compound iodine ointment was applied over the tumor.

September 24th.—No pains since admission. Bowels moved about twice daily. The red blood corpuscles were uniform in size and did not form rouleaux. These apparently diminished in number. The leucocytes increased in number.

September 27th.—The bowels were loose. The Fowler's solution was omitted and two grains of bismuth, subgallate with three grains of aromatic powder were given every three hours.

October 3d.—The bowels were regular and urine normal. The powders were stopped and treatment was resumed.

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*Read before the American Pediatric Society, Virginia Hot Springs, May 27, 1895.

October 20th.—Tumor appeared to be reduced in size. General health good.

December 2d.—The child was suddenly taken with nausea, vomiting, sore throat, and high temperature (103°.5 F.) The pharynx presented a bright red color. There was pain in the throat; the cervical glands were enlarged. Scarlet fever diagnosticated, and boy removed to isolating ward.

December 3d.—Patient very restless; slight redness of the palms of the hands and on the inner side of the thighs; throat red and swollen; temperature 104.6°. Throat was sprayed with Dobell's solution every two hours; a bitartrate of potash mixture was ordered, and four ounces of milk every three hours. At four P.M. the child was weak and restless. Temperature 104.6°. At nine P.M. he vomited a large amount of mucus and bile.

December 4th.—One A.M. temperature 105.4°. Very restless and unable to retain any nourishment. Four A.M. vomiting continued; temperature 106.4°; very restless and uneasy; pulse very weak and thready. Several tub-baths were given during the night but did not have any effect on the temperature. At eight A.M. the child passed quietly away.

Post-mortem Report—Rigor mortis marked; some adipose tissue present; increased pericardial fluid. The heart weighed six ounces; there was acute swelling in places on edges of the mitral valve. The lungs were normal; the kidneys firm. The right kidney weighed six ounces, the left seven ounces. The *intestines* and *pancreas* normal. The *liver* weighed forty-eight ounces. It was congested and was bound to the diaphragm and peritoneum by strong adhesions. The *spleen* weighed fifty ounces (fifty-two when fresh). It was firm and congested. The splenic glands were enlarged and reddened. The spleen occupied the left half of the abdominal cavity and was bound down to the peritoneum and the mesentery by fibrous bands.

MICROSCOPICAL REPORT.

BY WALTER REED, M.D.

Curator of the U. S. Army Medical Museum and Library, Washington, D.C.

Microscopical examination of the spleen shows a marked congestion of the organ, together with hyperplasia of the splenic trabeculæ; the malpighian bodies are smaller than usual. This passive congestion of the organ is probably due to the pressure of the enlarged chain of splenic glands upon the splenic vein. Sections of the enlarged glands which were found in the hilus of the spleen show numerous collections of lymphoid cells scattered throughout the entire area of the gland, together with many epithelioid-like cells which occupied the intervals between the lymphoid nodes. Sections of the liver show many small collections of lymphoid cells scattered throughout the liver parenchyma, and a few larger lymphoid nodes adjacent to the portal vessels; in many of these foci of lymphoid cells, there are to be seen one or several necrotic liver cells, some of which still partially preserve their nuclei. Sections of the kidney were normal.

Since no other glands of the body were involved in this case it would appear that it is a case of lympho-adenoma, or lympho-sarcoma, originating primarily in the splenic glands.

913 SIXTEENTH STREET.

SARCOMA OF THE LEFT SUPRA-RENAL CAPSULE AND METASTATIC SARCOMA OF THE SPINE IN AN INFANT FIVE WEEKS OLD.

BY AUGUSTUS CAILLÉ, M.D.
New York.

This specimen was taken from the body of an infant brought moribund to the Babes Ward of the Post-Graduate Hospital, N. Y. It showed convulsive twitchings and contractures of the extremities and a marked stiffness of the neck, so that some form of central lesion was at once diagnosed, particularly as the urine was found to be normal. The lungs and heart were free from disease. The autopsy showed a new growth of the supra-renal capsule. Diffuse metastatic sarcoma was located at about the third cervical vertebræ. An examination proved the tumor to be a cysto-sarcoma in the centre of which a large blood

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*Presented before the American Pediatric Society, May 26, 1895.

clot was visible. Had palpation of the tumor been possible through the extremely tympanitic and tense abdomen it would probably have been regarded as a large spleen.

DISCUSSION.

Dr. L. Emmett Holt: This looks very much like a primary hemorrhage into the supra-renal capsule. As most of you know, that condition is not so excessively rare in the newborn. It might have been primary rather than secondary.

Dr. Caillé: That was our first impression but our pathologist found it to be a round-celled sarcoma.

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School Hygiene—On account of the small size of the plot of ground on which a public school in New York city is to be built, the architect has been told to build an outdoors play-yard on the roof. Following are some of the novel features in the Henry street school, which will occupy a space of 190 by 100 feet: the playground will be on the roof. It will contain 10,000 square feet of space, equal to four city lots. On the south, east, and west sides, the playground will be protected by the roof, which will extend fifteen feet above the level of the playground. To the south the view will be unobstructed, and protected only by a wire netting. It will be covered with a wire netting to prevent children from throwing missiles into the street. The playground on the roof will only increase the cost of the structure about $4,000. As the total cost is to be about $200,000, the additional outlay is a mere trifle, when the benefit to the pupils is taken into consideration. The first floor will contain an indoor playground. The floor will be of asphalt. The second, third, and fourth stories are to be devoted to class-rooms, with sixteen on each floor. On the fifth floor, will be the manual training school. Here there will be a gymnasium and cooking rooms, with kitchen and ranges, for girl pupils, who will be inducted into the mysteries of culinary art.—*Journal American Med. Association.*

Clinical Lecture.

TUBERCULAR MENINGITIS AND CEREBRO-SPINAL MENINGITIS CONTRASTED.

A CLINICAL LECTURE DELIVERED AT THE ROYAL HOSPITAL FOR SICK CHILDREN, GLASGOW, ON MAY 28, 1895.

BY JAMES FINLAYSON, M.D.

Physician to the Sick Children's Hospital, and the Glasgow Western Infirmary.

Two children admitted to the hospital on the same day (May 8th), were seen by you soon after admission, both evidently affected with some disorder of the brain. Both cases have now run their course, and you saw in the post-mortem room both of the brains. The symptoms were discussed, compared, and contrasted at the bedside, and the true diagnosis was arrived at in both cases; but the subject is so important that a review of the points which led to the diagnosis may be useful to you, now that you have seen the actual state of matters after death.

The case of the older child, a boy eleven and a half years of age, presented little difficulty. We had here a typical case of tubercular meningitis—typical so far as we can speak of types in this disease; for you will soon find that cases differ from each other, and from the "types" you choose to create in your own minds; deviations from the ordinary cause, occur from certain of the usual symptoms being absent, or from certain peculiarities being superadded. In this case, for example, squinting which is one of the commonest symptoms was, and apparently had been, entirely absent. On looking at him, we found a bandage on his arm, and on inquiry, we found he had been treated at the out-patient department for a tubercular abscess of the elbow. This was a point of capital importance in the diagnosis, and made it almost superfluous to inquire into his family history or his previous health, or for the evidence of recent falling off in condition. These points are of great value in diagnosis in many cases, and indeed this boy's mother was said to be dying of "decline," but in his elbow there was obvious evidence, apart from all such inquiries, that our patient himself was effected with tubercular disease; and in presence of grave brain symptoms, the presumptive probability of tubercular disease in the brain, or its membranes, was overwhelming.

He lay almost unconscious, and showed little signs of consciousness even when disturbed. As already stated, there was no squinting; but his pupils were not natural. They were neither very contracted nor very dilated, but they did not respond normally to the stimulus of light. At the first application of light, you might chance to see a contraction sufficiently marked to make you think they were acting normally; but with the light still applied, you would see them dilate again, and indeed go through various phases in this way. This "oscultation" of the pupil, as we call it, is a common feature in tubercular meningitis. On watching the effect of the respiration on the pupil, we could occasionally see, in a slight form, what I have called attention to in a communication on Cheyne-Stokes breathing*; during the deep inspirations a dilatation was noticeable; a rhythmical dilatation and contraction, with the inspiration and expiration, may sometimes be seen in cases of Cheyne-Stokes breathing whether due to renal, cardiac, or cerebral disease.

In cases of tubercular meningitis we may have the most perfect development of Cheyne-Stokes breathing; but usually, the breathing is more of the irregular type, with recurring long drawn sighs.

On drawing the nail or a pencil over the skin of the abdomen, I showed you a moderately well developed "tache cerebrale." But you must not allow yourselves to be misled by this name into thinking that this is a pathognomic sign. We get it in typhoid fever, and various other diseases, usually no doubt with signs of nerve disturbance; at present I have in the Western Infirmary the most perfect specimen of it I ever saw, in a girl with Graves' disease.

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* "Observations on the State of the Pupil in Cheyne-Stokes Respiration," *Glasgow Medical Journal*, Sept. 1887, p. 221.

The abdomen in this boy was flat, or it might almost be described as retracted ; and this combined with the emaciation, which brought the pelvic bones into prominence, gave the appearance of the "boat-shaped belly" which you may have heard of under this or other allied names. The bowels in this case, as is usual in tubercular meningitis, were constipated, both before admission and while in the ward.

Vomiting did not seem to have been a feature in this case; certainly none occurred in the ward.

The temperature was higher than normal, but the degree of fever was not great—100° to 101° in the rectum. the pulse was usually high, 130 to 168 per minute. The examination of other organs pointed to some mischief in the lower part of the right lung.

The course of the case after admission was steadily downward, and he died on May 12th, without any marked elevation of temperature (100.2° F.) At the post-mortem examination, as you saw, the base of the brain was coated with exudation, the sylvian fissures were glued together on each side, and on lifting up the lobe, the granular appearance of the tubercles was recognizable. In the right lung a patch of pneumonic consolidation was seen in the lower part, where liquid râles had been heard; and a cheesy mass of bronchial glands were also found.

In comparing the other case we found some similarity but many points of contrast also. There was a marked internal squint of the right eye, and also a notable retraction of the head; both of these, with an obvious impairment of the consciousness and a tense fontanelle, at once suggested meningitis. But the diagnostic significance of the squint was largely affected by the history of its having been there for three months, while the brain symptoms were only supposed to be of at most three weeks duration. Before these symptoms came on there was a history of what was called "congestion of the lungs," taking the the illness back for six weeks before admission. But apart from the squint, the partially unconscious state, and the retracted head, pointed to some brain affection; the question, however, arose what kind of affection this might be? The pupils were equal, somewhat contracted at times, but sometimes moderately dilated, and a response to light, in the left pupil especially, could frequently be obtained. The child was fairly well nourished, and the history seemed to suggest some acute febrile illness arising out of the so-called congestion of the lungs. The temperature was high on admission (103.4° F.) and continued so (101° to 103° F.) There was a history of diarrhœa, and the bowels were loose on admission and continued so; this is of very unusual occurrence in tubercular meningitis, and although it does happen occasionally, it always makes one hesitate in the diagnosis. The abdomen, far from being retracted, was actually rather tumid. The persistence of high temperatures after comatose symptoms become developed in tubercular meningitis is quite unusual; and the pyrexia, the diarrhœa, and the tumid abdomen made one feel inclined to hope that the brain symptoms might be due to the nervous disturbance of enteric fever, as this frequently resembles tubercular meningitis. Even retraction of the head occurs in this fever, as I witnessed last winter in the case of a girl in my ward who recovered after a severe illness, characterized by diarrhœa and other diagnostic symptoms. In her case the retraction of the head was very marked and persisted for sometime. For a few days I actually thought we might see this favorable view of the baby's case confirmed as the temperature came down a little. The diarrhœa moderated; at the same time the nervous symptoms improved, and the retraction of the head became less extreme, and a week after admission the child was conscious enough to play with toys (May 15th). The presence of a *tache cerebral* in this case did not, as I have explained, exclude the diagnosis of enteric fever.

Eight days after admission (May 16th), the hopes of improvement were disappointed by the supervention of sickness and vomiting, and by an increased retraction of the head; this became more and more marked, and for four or five days before death it assumed the feature of a typical opisthotonus, as I pointed out to you. With this aggravation the unconsciousness became more profound, but the temperature still remained high (102° F.). With the disappearance of the partial improvement and the aggravation of the nervous symptoms, one had to give up the hope of the illness being due to the nervous disturbance of enteric fever; but all the points against the diagnosis of tubercular meningitis still remained in force, so I was led to think of some other fever with nervous symptoms as the cause of the illness, and cerebro-spinal fever, as it is sometimes called, or cerebro-spinal meningitis seemed to afford the most likely explanation of the symptoms. When the reaction of the head passed into a regular opisthotonus, the existence of this seemed almost certain. The feeding of the child, as it lay on its side with the head powerfully retracted, was very difficult; and regurgitation of the fluids through the nose repeatedly occurred. The child died on May 22d, fourteen days after admission. Tremulous movements of the arms occurred four or five days before death, and when the opisthotonus was most marked, some slight spasm of the legs, with pointing downwards of the toes, was recognized. There was no marked spasm of the hands, but the thumbs were often drawn across the palms. No pronounced convulsions occurred. The temperature ran up to 105° F. just before death.

The examination of the brain showed copious exudation of the gelatino-purulent type, over the whole surface, especially abundant on the convexity of the brain in the sulci. In this case a large amount of exudation was seen at the base and especially in the region of the optic chiasma, a region usually little affected in this form of meningitis. The spinal cord showed no exudation on the anterior surface, but the whole of the posterior surface, from the lower end of the cervical enlargement to the upper part of the lumbar enlargement, was coated with a thick layer of the same gelatino-purulent exudation.

Unfortunately, permission was not obtained for the examination of other parts of the body. It would have been important to see the state of the chest, particularly as there was a recent history of "congestion of the lung." Special interest attaches to this subject as the microbe of cerebro-spinal meningitis is said to be the same as the pneumonic. In my own practice, last winter, a man died in the height of pneumonia with high delirium, and at the post-mortem examination we found meningitis of the convexity. In another case I had some years ago, after the crisis of pneumonia seemed to be fairly established, a man became affected with alarming nervous symptoms, due no doubt to cerebro-spinal meningitis which was found after death.

In Glasgow, cerebro-spinal meningitis is a rare disease; sporadic cases occur at times, but no epidemic has been recognized here. In Agerline, Dr. William Frew described a small epidemic of this disease in a paper in the *Glasgow Medical Journal* for 1884; and he tells me that lately he has been seeing some cases in the district about Kilmamock.

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Serum Treatment of Cholera—Freymuth (*Deutsche Medicinische Wochenschrift)* has treated three cases of undoubted cholera by the injection of serum obtained from patients who had recently passed through an attack of the disease. Of these three cases, two recovered. In the fatal case, death was due to a mixed infection, as the bacteriological examination showed. In one case particularly, the patient rapidly improved after the injection. The serum was used in doses of ten, thirty, or even fifty cubic centimetres. It was shown to protect guinea-pigs against injections of virulent cholera bouillon. The treatment is easily carried out, and is without danger. The serum should be taken from those who have had a severe attack of cholera.—*British Medical Journal.*

Clinical Memoranda.

FOUR CASES OF TETANY IN INFANTS.

From the Service of Dr. Henry Koplik, Good Samaritan Dispensary, New York.

BY EMILY LEWI, M.D.

The following group of cases occurred in the dispensary service in the course of the last two years, and are characteristic as regards etiology and symptomatology. Dr. J. Lewis Smith, in his masterly articles in the ARCHIVES OF PEDIATRICS for 1889, indicates that these cases occur in America, and that careful clinical observation will bring more to light. Griffith, in his recent article, speaks of the paucity of reported cases, many cases published under such titles as carpo-pedal spasm, tonic feet and hand contraction, belonging rightly in the category of tetany.

CASE I—L. S., male, aged nine months, when three months old, had a convulsion. He had a second convulsion four days before he was first seen at the dispensary on February 27, 1894. *Status:* Child fairly nourished, but pale. Head square, fontanelle 2x2 c.m., ribs beaded, epiphyses of wrist enlarged. The condition of the extremities was very interesting, the hands were held stiffly in a state of persistent spasm, with flexion at the metacarpal-phalangeal articulation and extension of fingers beyond. The rigid thumb was adducted and lay close to the index finger. There was occasional movement of the thumb. When fingers or toes were touched, the child cried. The bowels were regular. Microscopical and chemical examination of the urine was negative. Bromides were administered. March 6th—Mother says the spasm continued the same for several days and nights; on this date, extension of the fingers and slight adduction of the thumb still existed, the rigidity, however, was diminished.

The child gradually improved, the spasm becoming remittent, until the mother would notice it but occasionally, perhaps, for an hour once or twice a day. In three weeks from the time of onset the child was well.

It is worth noting, that there were no gastro-intestinal disturbances, clinically observable. An extremely neurotic temperament, acting as a predisposing cause to this functional nerve disturbance.

CASE II—S. G., male, aged eight months. The mother is an extremely nervous woman, and has two other children, both rachitic. One of these was treated by Dr. Koplik, in the fall of 1893, for repeated attacks of tetany. Patient ever since he was two and one-half months old, has had occasional attacks of diarrhœa, alternating with constipation and occasionally vomited. When eight months old, the mother noticed for half a day that the baby held his hands in a peculiar stiff position, but it passed away. For three days before he was seen at the dispensary, the child was extremely irritable and cried when touched. The hands were held stiffly; this continued during sleep. The baby was constipated during the last four days. February 5th, child seen for the first time. He had rachitis; there were no teeth, the jaw was square, a rachitic rosary was present. Condition of hands and feet same as in Case I., except that the thumb was adducted and lay in palm of the hand. The slightest effort to straighten the fingers or toes causes great pain. Electrical examination made by Dr. Koplik showed increased reaction. The child was given bromides. Electrical treatment, mild galvanism, was applied every other day.

February 7th, child was improved; sometimes there was complete relaxation for several hours at a time. The spasmodic condition would again return, the child becoming irritable and restless. This continued for nine or ten days. February 18th, the child had been quite well for two whole days.

February 24th, the child was brought to the clinic again with a return of old symptoms. The child was extremely restless and in great fear of being touched. Constant spasm of same parts as before. Baby again constipated and vomited once. This attack continued two weeks, the spasm becoming intermittent with gradually increasing intervals between tetanoid attacks The child was well until April 19th, when he was brought with the same symptoms, although less severe, some angina noticed; in the night he had a general tonic convulsion, the whole body remaining stiff several minutes, and died in a tetanoid condition.

This case is of rare interest. A history of the same affection in an older child is very unusual. Both Smith and Griffith remark upon the family predisposition as very uncommon in children, although not infrequently occurring in adults, in a form of epidemic tetany. The patient had completely recovered from two attacks, the case being kept under observation before the fatal illness occurred. Constipation was the only gastro-intestinal symptom treated, and when relieved, spasms improved. A fatal termination was unexpected. Smith and Earle both consider death in these cases as due to a complication. Gowers mentions death from violent spasms causing exhaustion. Carpenter, in 1886, reported a fatal case during a relapse. Careful examination at the dispensary on the day the child died, showed only a mild angina. The possibility of some sudden respiratory interference suggests itself. During the last convulsion, general in its character, tongue, glottis, and all the laryngeal muscles may have been involved.

CASE III—F. A., male, aged eight months. Nothing could be ascertained about the child's previous history. The foster-mother had had the child for six weeks. For four weeks the child had been irritable and troublesome at night.

The child was seen the first time on March 27th, 1895. During the last four days the mother had noticed the peculiar position in which the child held his hands, and he could not bear to have them touched. Direct questioning elicited a history of constipation. On the day the symptoms were first observed, the child vomited a large amount of food. The child was very pale and poorly nourished, being somewhat rachitic, as shown in the shape of the head, fontanelle (2x1½ m.), and three teeth. The chest showed a rachitic rosary.

The dorsal surfaces of both hands were swollen. There was flexion at metacarpal-phalangeal articulation, extension beyond, the thumbs being extended and adducted. The child holds the hands away from the body, with the fore-arm slightly flexed. The dorsal surfaces of the feet were likewise swollen, the toes being held stiffly and flexed. The child cries when touched; muscles half way up to elbow shown to be sensitive in this case. Increased electrical reaction found on making the examination. Bromides were prescribed.

March 30th, bowels were irregular, but apt to be constipated. Tonic spasm of extremities much improved; some stiffness of fingers; thumb still adducted. Dorsum of foot showed slight swelling; moves toes a little; sleeps better. April 2d, fingers were a little stiff on the day before; spasm returned for about an hour.

April 5th, the child was quite well, allowed fingers and toes to be touched, without resisting, swelling had disappeared. A marked symptom in this case was the acute œdema of the hands and feet. This is ascribed by Gowers to the acute obstruction of the return circulation due to the tonic contraction of the muscles.

CASE IV—W. G., male, aged thirteen months. There were three other children; one child, three years old, the mother said, had this same trouble when one year old. Patient had a convulsion when four months old. Three days before the mother brought him to the dispensary, the child was again taken ill with fever, closed his eyes, clenched his fists, and had an attack in which he could not get his breath, and made a great deal of noise, when he breathed. His bowels have been constipated; he vomited daily.

Status: April 15th, child very plump, flesh flabby, cheeks flushed, skin very moist; fontanelle 2x2 c.m.; head square, eight teeth. When child breathes, well marked inspiratory crow is heard; neck short and thick; rachitic beading of ribs, epiphyses at wrist and ankle enlarged.

In this case, again, œdema of the hands and feet as in Case III.; slight flexion at wrist joint, and continued spasm of same muscles as in that case. The child cried when hands and feet were touched. Erythematous spots about the size of a dime were observed in the œdematous portion. Bromides and laxatives were prescribed.

April 17th, œdema was still present. At times, the mother says, the extremities relaxed, but when seen, the hand was stiff, and the thumb adducted.

April 19th, the swelling was gone, fingers moved freely, were not painful when touched; lower extremities were normal.

April 20th, the child had an attack of laryngismus stridulous about once an hour, blue discoloration of lips, noisy breathing for about half a minute, gasping for breath, followed by copious perspiration. No return of tetanic condition. Child very pale when seen.

April 24th, occasional gasping for breath. No spasm. Two to three yellow movements a day.

The family history of the same affection in another child cannot be considered as reliable, as the older child was not seen at the dispensary, but is noted, as the mother gave the statement, without questioning on that point. Laryngismus stridulous has frequently been observed in these cases.

In conclusion, it is desirable to call attention to certain factors in the above series of cases. All four cases occurred in males, this bears out Gowers' and Smith's observations. Three cases were in the first year of life, the fourth had just passed the year limit. Rachitis was found in each instance, sometimes in a mild, again in a severe form. The spasms were always symmetrical; pain was invariably present. Although clinical observers consider the prognosis favorable in these cases, the fatal outcome of Case II. would render a guarded prognosis advisable.

DESCRIPTION OF PLATES.

(From Photographs by Dr. Koplik.)

Case I. shows flexion of hand at metacarpal-phalangeal articulation.

Case III. shows rigid extension of fingers.

VARICELLA, PERTUSSIS PRIMARY LARYNGEAL DIPHTHERIA, INTUBATION, COMPLETE RELIEF OF PAROXYSMAL COUGH, DEATH.

BY JOHN LOVETT MORSE, A.M., M.D.

Physician to Out-Patients' at the Boston City Hospital and at the West End Nursery and Infants' Hospital.

Carl B., aged four, was seen in consultation with Dr. W. H. Prescott at the Little Wanderers' Home on February 3, 1895, at four P.M. No history was obtainable, except that he had been suffering from chicken-pox and whooping cough for some time, and, seeming worse, had been put in the hospital ward on January 24. He first began to be croupy during the night of February 1. The dyspnœa had continued, at times being very urgent.

He was well developed and nourished. There was marked pallor of the skin, with slight cyanosis. The nares were occluded and bleeding. The cervical glands, however, were not at all enlarged. The tonsils were not enlarged, and the throat was but little reddened. No membrane was visible. The respiration was rapid and noisy, and accompanied by marked retraction of the epigastrium and lower intercostal and supra-clavicular spaces. A hasty examination of the chest showed respiration to be everywhere present, with numerous râles, but no definite evidence of consolidation. Evidences of varicella were still visible. The general condition was decidedly bad. While there was no doubt as to the diagnosis of laryngeal obstruction, its cause seemed obscure. Diphtheria was strongly considered by both Dr. Prescott and myself, but finally discarded in favor of a simple catarrhal inflammation, as there were absolutely no other evidences of diphtheria, and the chicken-pox and whooping-cough seemed amply sufficient to account for the local inflammation. I at once performed intubation, Dr. Prescott assisting. It afforded immediate relief, the patient soon falling asleep. It was especially noted at this time, that the epiglottis and arytenoids were not swollen. No membrane was coughed up, but a large amount of muco-purulent material was expelled through the tube at first. He took his food and treatment well, and there was no return of the dyspnœa. The temperature, however, ran high, and death occurred at 5.30 P.M., February 5. It was particularly noted that the child did not whoop after the tube was introduced, although he had been having frequent paroxysms previously.

The autopsy was made at 11 A.M., February 6, by Dr. F. B. Mallory. The throat showed nothing abnormal. There was membrane in the larynx, however, beginning below the vocal cords, and extending down the trachea and into the larger bronchi. Both lungs showed very profuse broncho-pneumonia. Blood clotted; liver much congested; spleenic tumor. Cloudy swelling of kidneys. A culture on blood serum from the trachea, gave a mild growth of Klebs-Loeffler bacilli and streptococci.

This case is of interest, in that it adds another to the list of proved cases of primary laryngeal diphtheria, and emphasizes the fact that laryngeal obstruction must be considered as diphtheritic—*i. e.*, due to the action of the Klebs-Loeffler bacillus—until it is proved not to be. On this assumption only can these cases be safely treated.

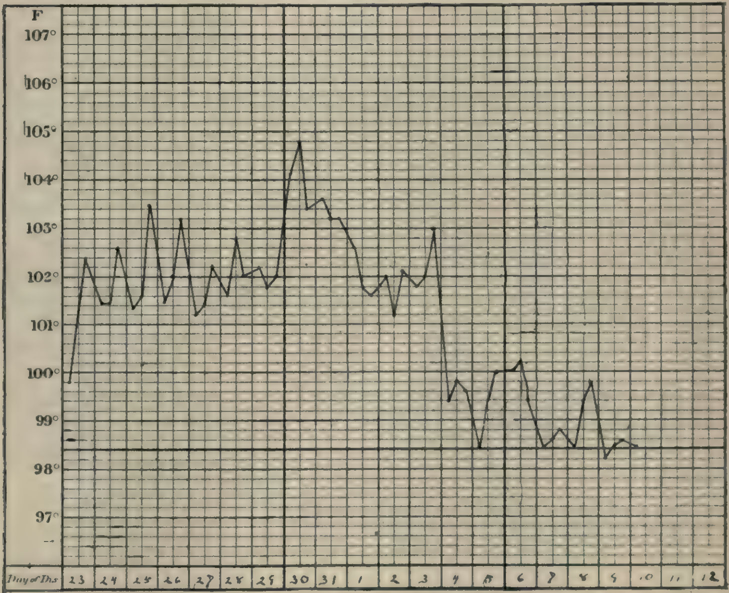
The complete cessation of the paroxysms of whooping, after the intubation, is also of interest, in that it suggests a new method of treatment for severe pertussis. Taub, of Budapest, has already employed it in two cases, with very satisfactory results. He introduced the tube daily, leaving it in from three to five hours. While the tube was in place, and for some hours after its removal, the paroxysms were entirely relieved. Moreover, the attacks steadily diminished in frequency and severity, recovery being exceptionally rapid. The probable explanation is, that the laryngeal hyperæsthesia is diminished by the presence of the tube. These results certainly seem sufficiently favorable to justify the further employment of intubation as a palliative measure in severe cases of pertussis.

A CASE OF ASPIRATION BRONCHO-PNEUMONIA IN AN INFANT.

BY J. H. MUSSER, M.D.

Assistant Professor of Clinical Medicine, University of Pennsylvania.

The birth of the child was delayed, and was terminated by instruments. Within the first twenty-four hours a severe laryngeal cough began, although the best care had been taken during the nursing and bathing of the child. The cough was high in pitch, and seemed to cause pain. The *respirations* were increased in frequency at once, and varied from time to time throughout the illness, at one time as low as forty, again as high as eighty per minute. The subjoined chart discloses the temperature range throughout the illness. The pulse was always very rapid but variable in frequency. It ranged from 140 to 160, and often could not be counted. It was at times



irregular. The appetite was lost early, and for a time the small supply of nourishment taken threatened life. The bowels were moved each day three or four times, and at two periods, diarrhœa with excess of mucus was present.

The physical signs were those of bronchitis, with high pitched bronchial breathing over the trachea, and large bronchi. The resonance was at times impaired in small areas behind, and over such areas, fine moist râles were heard. The mouth and pharynx were quite congested. The tongue was redder than normal.

The infant at birth weighed eight and one-half pounds. Its skin was free from eruptions. There were no fissures or eruptions about the mouth or anus. Coryza was not present. The skull and long bones were normal.

That the bronchitis was due to aspiration of irritating material during birth, seemed to be proven by the absence of any other cause for the inflammation and by the appearance of the mouth and fauces. The mother had had previous to labor, a bichloride douche. The occurrence of a crisis on the thirteenth day of the disease seemed unusual. It is possible that the rise of temperature on the eighth day marked the onset of pneumonia, the presence of which could not be determined by physical examination.

Bacteriological examination of the discharge was not possible. The recovery was uninterrupted. The treatment consisted in counter-irritation, stimulants in moderation, aromatic spirits of ammonia, and digitalis.

1927 CHESTNUT STREET.

SEPARATION OF BOTH ENDS OF THE HUMERUS DURING DELIVERY.

BY SAMUEL E. MILLIKEN, M.D.

Surgeon-in-Chief, New York Infirmary for Crippled Children.

On May 14th, 1891, I was called by a physician to see a baby two and a half days old, who had received a complete separation of both ends of the left humerus during delivery. The labor had been a tedious one, and a consultant had been called. Attention had not been called to the accidental epiphyseal separation until the second day, when it was noticed that the left arm was limp and useless. On careful examination complete separation of both epiphyses was discovered.

The dressing consisted of antero-posterior paste-board splints to the arm, with a cap for the shoulder of the same material, the whole being held in place by means of a starch bandage. The fore-arm was flexed to 90°, and the arm was bound to the chest. On May 17th, inspection of the dressing assured me that the position was good. On June 11th, thirty days after the injury, or twenty-eight days after the dressing was applied, an examination was made which showed that union had taken place, and all support was left off. Considerable callous or deposit could be felt at each line of union. The movements of the shoulder joint were free. Pronation and supination of the fore-arm was normal, but resistance was met when an attempt was made to fully extend the elbow.

Epiphyseal fracture, technically called diastasis, was first accurately described nearly at the same time by Roux and Gueritin The most common cause of diastasis is a wrench of the part, violent traction, or a severe fall. The various treatises on surgery contain little or nothing on epiphyseal separation occurring during delivery, yet it must happen more frequently than the few cases which are reported in current literature would lead us to suppose. The surgeon has little opportunity to gather statistics, as most of these cases are treated by the attending physician.

AN ENDEMIC OF MEASLES.

BY J. B. MARVIN, M.D.

Professor of Principles and Practice of Medicine, Kentucky School of Medicine.

I have seen at the Baptist Orphan's Home, in the last two months, eighty-one cases of measles, the epidemic this year being remarkably light. During the earlier weeks, the children developed little or no fever; one or two had shown some signs of croup. There had been less coryza and other annoying symptoms, than in any cases of measles that I have ever attended. Some of them would start with what seemed to be croup; they would cough and sneeze, but there was little or no conjunctival irritation, and not much nasal irritation.

While I was absent for a few days, other cases appeared which Dr. Henry E. Tuley attended. I found that fifteen cases out of the eighty-one had developed middle ear symptoms. One little fellow had a large abscess localized in front of the ear, which was opened.

A curious point that I wish to mention particularly, is that quite a number of these cases suffered from severe stomatitis. One of them complained so much of his mouth and throat, and had such high fever that he was isolated, diphtheria being suspected. The whole buccal cavity was involved, as were also the lips, and there was great salivation. One case, a child who was cross-eyed, seemed to have some cerebral trouble. He had spots of gangrene on the scrotum and prepuce, and about the nates, although the attack of measles was a mild one.

A point to be considered in these cases, is that they are taken from all portions of the State. Generally they are poor children, some of them coming from other orphan asylums, and from poor houses. They are in sanitary surroundings, but any acute trouble, no matter how mild it may be, is liable to be followed by grave constitutional manifestations afterward. In private practice it is rare to find as severe middle ear trouble, or such marked stomatitis during a mild attack of measles.

Editorial.

THE NEUROSES OF CHILDHOOD.

THE chapter which appears in the present issue of the ARCHIVES brings to a close the admirable series of papers by Dr. Rachford on "Certain Physiological Factors of the Neuroses of Childhood." The series has been one of great interest, and has presented the result of much original research. Beginning with a review of the normal functions of the nerve cells, the author next discusses, at considerable length, the physiological peculiarities of the nervous system of infancy and childhood. He then considers in detail the subject of fever, and the variable high temperatures of childhood. From these studies he reaches the conclusion that in normal children the thermogenic centres are not only more unstable than in adults, but that the thermo-inhibitory centres are weaker, and are therefore more incapable of exercising proper control. In nervous, anaemic children, these peculiarities are exaggerated, so that variable and high temperatures are frequently seen among them. The exciting causes of these high temperatures he divides into four classes: 1. Bacterial Products; 2. Insolation; 3. Convulsive Muscular Action; 4. Mechanical and Reflex Causes. Among these, bacterial products are, by far, the most important and frequent.

Blood changes are next considered, as being important factors in the production of nervous diseases in children. The most important of these changes are the presence of bacteria, or their toxins, in the blood, a venous condition of the blood, and an impoverished condition of the blood That toxins may play an important part in the production of these diseases is clearly demonstrated, both ptomaine and leucomaine poisoning being not uncommon. It is also clearly shown by the author, that various blood changes are very potent in producing an excitable condition of the nerve centres. He draws a distinction between simple innutrition and malnutrition. The former he believes to be an unimportant cause of neurotic disease in children. It is *bad* blood, and not *thin* blood, that is an important factor in the production of such disorders.

Reflex irritation is another frequent and important factor in the production of the neuroses of childhood. Such irritation acts as an exciting cause more frequently in children because of the irritability of the nerve centres, and the slighter inhibitory control of the higher nerve centres. Blood changes are not infrequently allies of reflex disturbances.

The author does not believe that either of these conditions acts as the sole cause of neurotic disease. They act rather as exciting causes, rendered potent by the peculiar irritable and unstable nervous organism of the child. They are far more potent in children of neurotic parentage, or in those whose nervous systems are rendered weak and susceptible by various predisposing causes.

NERVOUS CHILDREN.

A SENTENCE in Dr. Rachford's article in the present number is worthy of more than usual attention. "The vast army of neurasthenics and hysterics which now inhabit our cities, is yearly being increased by subjecting the immature nervous systems of young children to the almost constant excitement, strain, and mental activity, which our social order has surrounded them with." If this be true, as we fully believe it is, the duty of the physician comprises something more than prescribing for a child's passing maladies. This duty is clearly outlined in another sentence of the same article, in which the pediatrist is referred to as one "who should be especially interested in making of the child the strongest possible man."

The whole period of infancy and childhood is one of preparation for the duties of adult life. It is the desire of every parent that his child should grow to manhood, vigorous in body and mind. Many of the conditions of modern life, however, tend directly to frustrate these wishes. Too often, the parents, instead of aiding their child to become the strongest possible man, do what will produce the opposite result. They forget that the world is fresh and new to the child, that he does not require constant novelty, that he is happier with simple pleasures, and does not need to be goaded to enjoyment by novel and strange pastimes.

The seeds of "neurasthenia" are frequently planted years before the child is born. He enters the world with an irritable nervous system. Stimulation begins at the outset. The baby is shown off to all comers, and is made to live in an air of excitement. As he grows older, being the most remarkable child in the world, stimulation goes on. His memory is overcrowded; his mental powers are constantly kept at high tension; his pleasures are too exciting; he has no quiet or seclusion. A little later, he is sent to school, and begins a long, mad rush for promotions, which continues until he leaves college. During this whole period his pleasures and pastimes are those of his parents, not those of the normal child. When he reaches maturity, he, and more especially she, is a well-developed hysteric or neurasthenic.

This picture is perhaps overdrawn for most children, but there are many to whom it will truly apply. The tendency to the over-stimulation of children is unquestionably becoming more universal.

Against this tendency the family physician may be the most potent barrier. His advice will be followed when that of others will be totally disregarded. As childhood is a preparation for manhood, he should not be content to limit his attentions in the families he attends, to the simple relieving of the passing ailments of the children. He should assume the duty of aiding his little patients, as far as he may, to become the strongest possible men.

THE CRAIG COLONY FOR EPILEPTICS issued its first annual report in May. The establishing of this Colony was a notable event in American medicine, and has justly received much attention. It is located on a tract of land extending from the lowlands of the Genesee Valley up the slope of the western hills, a distance of nearly three miles, and is one mile in width. It will be a colony in the true sense of the term. There are several colonies of similar character in Europe, the most notable of which is that at Bielefeld. Several institutions in this country bear the name of Colony, but they are not such, in the strict sense of the term.

Epileptics are among the most unfortunate of beings. They cannot be received into the public schools, they become burdensome to their families, and find it difficult to gain employment as they grow older. Few general hospitals receive them as patients. There is, in fact, no place for the epileptic poor, except the almshouse or the insane asylum. There are, at present, about six hundred of these unfortunates in the almshouses of New York, and four hundred in the insane asylums. The object of the Craig Colony is to provide for four great needs of epileptics, which are not satisfied elsewhere. 1st. To give them schools where they may attain any degree in education. 2nd. To provide industrial training of all kinds, for there is no vocation which some epileptics may not follow. 3rd. To give them a home, when all other doors are closed to them. 4th. To see that each case is carefully studied and treated.

It is the design of the Colony ultimately to receive both the rich and the poor. The property is divided by a deep ravine into two portions. Upon one side will be located all the institutions designed for those who would otherwise go to the almshouses. These will first be perfected. Upon the other side will be buildings of various kinds, among them private cottages, where the families of the well-to-do may reside, as in a village, while their unfortunate sufferers are under treatment. If the Colony remains unhampered by political interference, it is destined to be one of the most beneficent institutions of the State.

THE COMPARATIVE VITALITY OF THE SEXES is a subject of interest to the medical man as well as to the life insurance company. It is the common impression, that men are not only less subject to illness, but are longer lived than women. The life tables of insurance companies, however, show that the term of life of women is slightly longer than that of men. The difference in the mortality rates during the first few years of life is striking. During the first year, the mortality among males is decidedly greater than among females. Although more boys are born than girls, the proportions are reduced to almost even terms at the end of the first year by the excessive male mortality. Even during the first four years the mortality among males exceeds that among females, notwithstanding the fact that there are practically no distinctions made in the management of the two sexes. Both are subject to the same conditions, are dressed virtually the same, and receive the same food. At about five years the comparative death rate among girls begins to increase. This has been attributed to the fact that boys of this age are more in the open air. The mortality in both sexes diminishes from this time until the twelfth year, when it attains its lowest point. It then steadily rises, being larger in each successive year. Between the twelfth and sixteenth years the death rate among girls increases more rapidly than among boys, but after the sixteenth year for several years the rate of increase is more rapid on the male side. The explanations that have been offered for these peculiarities are not wholly satisfactory, but one fact is clear, that during early years females possess a greater tenacity of life than do males.

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The New York Pedic Society—This society was formed by special act of the last legislature, and held its first meeting in June. It is believed that it will fill a long-felt want, by bringing together the most eminent practitioners in this department, and raising the standard of excellence. Many incompetent men have engaged in the practice of this specialty during the past few years, and it is hoped that the new society may be influential in reducing their number, and, thus, in protecting from imposition a corn-afflicted public. We wish all success to the chiropodists in their new undertaking.

Bibliography.

The Care of the Baby, A Manual for Mothers and Nurses, Containing Practical Directions for the Management of Infancy and Childhood in Health and in Disease. By J. P. Crozer Griffith, M.D., *Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania; Professor of Clinical Medicine in Philadelphia Polyclinic and School for Graduates in Medicine; Physician to the Children's Hospital, to the Methodist Episcopal Hospital, and to St. Agnes' Hospital, Philadelphia; Member of the American Pediatric Society and of the Association of American Physicians.* Philadelphia: W. B. Saunders, 925 Walnut Street. 1895. Pp. 8-377. Price, $1.50.

The author of a work of this character assumes a most difficult task. His statements must be plain and easily understood, and adapted to the needs of the untrained, and perhaps uneducated mother. On the other hand they must be scientifically correct, and he must deal with many subjects of strictly scientific nature. He must teach the mother those things which she should know regarding the baby and its diseases, but he must not encroach upon the domain of the physician. He must furnish knowledge that will enable her to meet many emergencies without instilling into her mind the idea that she is capable of taking the full medical charge of her infant. In fulfilling these requirements, Dr. Griffith has been eminently successful. He has, in fact, produced the best book for the use of the young mother with which we are acquainted. The style is clear and easily understood and the book is very interesting. The subject matter and statistics are thoroughly reliable, and are in accord with the best judgment of the profession. The book discusses many points upon which there are differences of opinion, and it would be easy to criticise certain details. They are, however, almost without exception, details of minor importance.

The first chapter, "Before the Baby Comes," gives most excellent advice regarding pregnancy and its management, and might profitably have been somewhat more extended. The second and third chapters include many important facts regarding the baby, its growth and development. The chapter upon the baby's toilet contains a complete list of things which should be provided before the baby's coming, and details many matters of importance regarding the personal management and hygiene of the infant. The chapter on the baby's clothes is one of the best in the book. It contains a description of the various articles needed for the long clothes, the short clothes, and the clothes of early childhood. The author speaks strongly against tight clothing and bands, and advises the Gertrude or princess style of cutting the long clothes. He seems inclined to favor the abdominal band. When made and applied according to his directions, we agree with his opinion that it is a garment possessing many advantages. Proper clothing is a matter of such vital importance to the comfort and well-being of the infant, that physicians should render themselves thoroughly conversant with modern and more rational methods, and should use their influence in having them adopted.

The chapter on feeding will be the one, perhaps, to which the medical man will first turn. It is, on the whole, very satisfactory. The general directions will commend themselves to the physician. The formulæ given are simple and easily prepared, and the directions are clear and explicit. The author emphasizes important details without going too fully into minutiæ, with which many books of this character are burdened and rendered obscure. The diet lists will prove of great value both to mother and physician. The chapters on sleep, and the physical, mental, and moral training are also good. The same is true of the chapter on the baby's nurses.

About one hundred and thirty pages are devoted to the care of the sick baby.

This is, in some regards, the most difficult portion of the book to make satisfactory. In a few diseases the author has perhaps gone too freely into medical matters. Several subjects are considered which are quite rare, or so special as only to be understood by the physician. He has, however, touched very lightly upon internal medication, and the section is, on the whole, far more satisfactory than is usual in such works. An appendix contains a very excellent dietary which will not only prove useful to the mother, but will save the family physician time and trouble in writing directions. It also contains a full description for giving different baths, and for making poultices and various external applications.

It would be an error to suppose that the work will prove of value to mothers alone. As it is written in a scientific spirit and contains a vast store of information regarding infancy, it can be read with profit by most physicians. There are very few general practitioners who could not read the book through without advantage. The illustrations are excellent, most of them being new, and add greatly to the value of the work.

Diseases and Deformities of the Fœtus; an Attempt towards a System of Ante-natal Pathology. Volume II. Congenital Diseases of the Subcutaneous Tissue and Skin. With plates. By J. W. Ballantyne, M.D., F.R.S.E., F.R.C.P.E., *Lecturer on Diseases of Infancy and Childhood, Minto House; and on Midwifery and Diseases of Women, Medical College for Women, Edinburgh.* Edinburgh: Oliver & Boyd. 1895. Pp. xii.–264. Price, 10s. 6d.

The first volume of this elaborate work appeared more than two years ago. In a review at that time the ARCHIVES expressed the opinion that the chief unfavorable criticism to be made, was based on the almost too great thoroughness with which the work was to be treated. If all parts of the subject were treated in the same comprehensive style, its completion seemed scarcely within the compass of a human life. This opinion seems partially confirmed by the statement of the author, that the long delay in the appearance of the second volume is due to the magnitude of the task of gathering together and classifying the numerous contributions which have been made to fœtal pathology during the past fifty years. Although many contributions have been made to the subject of fœtal disease, the most comprehensive and authoritative work yet published is that of Graetzer, published more than half a century ago.

The author proposes to cover the whole field, and produce an authoritative work which shall present practically all that is known on this subject at the present day. The present volume is, therefore, like its predecessor, a monument of industry and research. It is, however, the industry of the compiler. Although the author has done much original study in fœtal pathology, the book on the whole cannot be regarded as an original one. Every detail has been carefully investigated and elaborated with painstaking care. The exhaustive research involved in the work, is shown by the fact that two hundred and twenty-seven authorities are quoted on sclerema neonatorum alone, and over five hundred on the diseases of the skin.

The first pages are devoted to sclerema neonatorum. The chapter of most interest is that devoted to pathogenesis, which is discussed in a most exhaustive manner, the various theories being considered in detail. In summarizing these theories, the author expresses the opinion, that in most cases, the morbid process resulting in sclerema is initiated in utero, that the most important factor in its pathogenesis is an ante-natal lesion of the nervous system, possibly of the thermic centres, and that cutaneous chilling is only one of several conditions that may serve to develop the malady when it is already present at birth.

The remaining portion of the book is devoted to diseases of the skin, about ninety pages being occupied by ichthyosis in its various forms. The classification adopted by the author is very elaborate, as all modern classifications of skin diseases have grown to be. The subject is not completed in this volume, and will evidently extend well into the third.

The Treatment and Education of Mentally Feeble Children. By Fletcher Beach, M.B., F.R.C.P., Lond., *Physician to the West End Hospital for Nervous Diseases.* London: J. & A. Churchill. 1895. Pp. 32.

This little monograph cannot fail to be of value to any physician having under his care a mentally feeble child. The treatment proposed by the author consists of: (1), Attention to hygienic conditions; (2), Adaptation of the principles of medicine to the infirmities which exist in this class of patients; (3), Improvement of physical defects and imperfections; (4), Education and training of the moral and intellectual faculties. The diseases to which children of this class are especially subject are those of the wasting type. Phthisis, bronchitis, and catarrhal pneumonia are especially common among them, while enlargement of the glands and the symptoms which are commonly observed in the so-called scrofulous constitution are very prevalent. Diarrhœa, eczema, and various skin disorders are also common. The author believes that the cases which can be relieved by craniectomy are extremely rare, and that much more can be accomplished by education and training. He approves fully of the use of thyroid extract in the cretinoid type. Moral and intellectual training must be begun early and must be persisted in. The brightest looking children are often volatile, and their attention is not easily gained. The phlegmatic in temperament are frequently more readily trained because their attention is held more easily. Regularity in giving lessons, and the greatest patience on the part of the teacher are absolutely necessary. As it is difficult to obtain these requisites at home, the author believes that such children should be removed to suitable institutions, where their education will be made the one matter of primary importance. The error in believing that these children at the age of twelve or fourteen will suddenly change for the better, should not be encouraged, for such sudden changes do not occur.

The International Medical Annual and Practitioners' Index; a Work of Reference for Medical Practitioners. 1895. New York: E. B. Treat. Pp. 648. $2.75.

The thirteenth edition of this well-known annual is more complete than any which have preceded it. An unusual amount of attention is devoted to children and their diseases. A full chapter upon the eyesight of school children is worthy of especial notice. It deals very fully with the conditions which tend to impair the sight of children at school, and with the methods of prevention. The seven full-page illustrations accompanying this chapter, show most strikingly the incorrect position assumed by children in writing and studying, and the facility with which eyes are injured in the ordinary school room.

Friedreich's disease, or hereditary ataxia, is also treated most satisfactorily, and is well illustrated. In the chapter on idiocy, the thyroid treatment in sporadic cretinism is considered at considerable length, and is illustrated by a number of excellent plates. Four of these in one series show most strikingly the improvement which is capable of taking place during the period of a single year. The subject of craniectomy for microcephalus is carefully reviewed, the opinions of various writers being given. The author evidently leans to the belief that the operation is justifiable if a judicious selection of cases is made, notwithstanding the heavy mortality which has been reported. A short chapter upon the relation of adenoid growths to mental dullness is of considerable interest. Paralysis is considered at some length, especially those forms which occur in infancy. The illustrations in this chapter are also very good.

Current Literature.

I.—MEDICINE.

Stowell, William L.: Diphtheria in Tenements—Seven Years' Results. (*Medical Record*, 1895, Vol. 47, No. 18.)

The author reports cases of diphtheria in tenements visited during seven years for the Demilt Dispensary.

This is the same class that furnishes the hospital clientage, poor in physique as well as purse. The total number of patients was 16,498 of whom 177 had diphtheria. Of this number 24 died, giving a mortality of 13.55 per cent.

Cases of tonsilitis were carefully excluded. During this period there were 551 cases of tonsilitis, none of whom died. During the first five years, the diagnosis was clinical; during the past two years it was confirmed by bacterial culture by the Board of Health. These cases show diphtheria as it appears in unfavorable surroundings and includes several epidemics. Although the results are gratifying, the death rate may be made to appear lower by the method of elimination sometimes employed. Omitting five cases that died within twenty-four hours, the death rate would read 10.73 per cent. During the first three years, carbolic acid and lime water was the most usual treatment. Peroxide of hydrogen diluted one-half with water was used exclusively during the last four years. Bichloride of mercury was never used either locally or internally. All cases received a few doses of calomel at the beginning, and subsequently tincture of the chloride of iron in doses of about ten drops.

The cases bear out the common belief that diphtheria is less fatal in private practice than in hospital. The average mortality at the Willard Parker Hospital from 1889 to 1892, inclusive, was 23.78 per cent.; for 1893, 18 per cent.; for 1894, 27 per cent.

Diller, Theodore: Cerebral Palsies of Childhood—Report of Six Cases. (*Pittsburg Medical Review.* 1895. Vol. ix., No. 3.)

The cerebral palsies of childhood are not uncommon, but are often unrecognized. The clinical features are, however, well known. On the subject of pathology (excepting of the birth palsies) very little is definitely known; and, as an almost inevitable consequence, numerous speculations and various conflicting theories abound. The very name, cerebral palsies, indicates our lack of knowledge as to the pathology and morbid anatomy. It signifies only that the palsy is one of childhood, and is cerebral in origin; and it is well, that this name should be retained, until we shall have gained a better knowledge of the underlying pathological changes which produce these symptoms.

These palsies may be divided into those which are congenital, or occur just at birth, and those which occur in infancy and early childhood. The first, (often called birth palsies) occur usually in the form of diplegias and paraplegias; and are frequently, but not always, due to meningeal hemorrhages; while the latter occur in the form of hemiplegias, as a rule, and the morbid anatomy is variable, and indeed, enigmatical.

Diplegia, or paraplegia results most frequently from meningeal hemorrhages. In many of these cases the labor is prolonged, the pelvis contracted, the head large, or the instruments have been used. In short, parturition has been difficult. This form of paralysis is an exception to the rule that paraplegia is usually of spinal origin.

Hemiplegia usually appears before the end of the second year, and is rare after the fifth year. In one-half of four hundred and twenty-eight cases collected by Osler, the disease began with convulsions, so that this symptom is a very important one. This convulsion is generally unilateral (Gowers). A number of cases set in during or upon the subsidence of an acute infectious fever. There is frequently some febrile disturbance for several days at the onset. In a few cases the paralysis comes on gradually, without initial symptoms which attract attention. After the onset the paralysis generally improves in varying degrees, but the characteristic hemiplegic gait is usually present; stiffness with contraction of flexor and adductor muscles, appears—the so-called spastic symptoms. If hemiplegia be right-sided, aphasia may be noted. In time, more or less difference in the size of the limbs on the two sides becomes apparent, and in some cases grows to be extreme. This is not so much due to actual atrophy, but rather to the trophic changes which leave the affected members in a more or less stationary condition; while the sound side, so to speak, grows away from it. Mental defects are usually observed after the acute onset, or when the child is old enough to manifest it. Moral defects are also frequently seen and may be more apparent than the mental.

The prognosis is usually bad, owing to the presence of moral and mental defects, together with a tendency to epilepsy. It should be ever borne in mind that convulsions in children may be a symptom of an on-coming cerebral palsy. Physicians attending obstetrical cases should always bear in mind the possibility of meningeal hemorrhages in protracted, difficult, and instrumental labors. Certainly many of these cases are caused by difficult parturition. Yet in a given case of diplegia, where forceps have been used to deliver the head, the physician should never express the opinion that the paralysis was caused by them, as he can never be certain; and may, in doing so, cast reflections upon some competent and wholly unblameworthy professional brother, and thus do him grave injustice.

The author reports seven cases, the histories of which are given in detail. The most important clinical features of each are given in the following table :

Case.	Age at onset.	Mental condition.	Moral condition.	Paralysis.	Epilepsey.	Time between first and second convulsion.	Athetosis.
1	8 mos.	Bad.	Bad.	Left H.	Yes.	....	....
2	2 yrs.	Good.	Bad.	Left H.	Yes.	3 yrs.	Yes.
3	Birth.	Slight.	Good.	R. H.	Mal petite.	4 yrs.	Yes.
4	8 mos.	Dull.	Good.	L. H.	Yes.	No long interval	No.
5	6 yrs.	No change noticeable.		R. H.	Convulsions only at onset.	....	No.
6	6 yrs.	Fair.	Good.	R. H.	Yes.	....	Yes.
7	1½ days.	Fair.	Good.	None.	Yes.	Fourteen mos.	No.

All these cases except in birth palsies began with convulsions immediately followed by hemiplegia. In only two of these cases was there any mental or moral deterioration; paralysis was present in six cases; athetosis was present in five cases ; aphasia in one.

Griffith, J. P. C.: Tetany, with a Report of Five Cases. (*American Journal Medical Sciences,* Vol. cix., No. ii., 1895.)

The writer refers first to the confusion existing as to what tetany really is. Many writers would confine it to those cases in which there is very marked intermission, in the spasm; reserving the word "arthrogeyposis" for those in which the contraction is more continuous. "Carpo-pedal" spasm is by some writers considered quite distinct from tetany, and by others viewed as a minor form of it. Strumpell does not believe in the existence of tetany in early childhood, and Henoch distinguishes between the disease as seen in children and adults. Others speak of tetany, and a pseudo-tetany.

Several distinct varieties of tetany have been described, rheumatic tetany, chronic tetany, tetany following thyrodectomy, and tetany due to dilatation of the stomach. The author believes it to be impossible to establish any line of demarcation between the different forms of this disease. There are numberless gradations between the well-marked, wide-spread, intermittent contractions and of the continuous or intermittent carpo-pedal spasms. Not every case shows all the cardinal symptoms, including those described by Trousseau, Chrostlk and Erb.

Tetany is defined as a disease consisting of tonic spasm, either continuous or paroxysmal, usually symmetrical, affecting particularly the extremities, but often wide-spread or sometimes confined to one limb; not accompanied by unconsciousness, and not depending upon any verative lesion of the brain cord or nerves, or upon hysteria.

Five cases are reported, the first, a boy of nineteen months. In this case the disease was associated with gastro-intestinal disturbance. Pain was present only when the parts were handled. Laryngismus was present to a slight degree.

The second case was that of a mulatto child two years of age. The patient was rachitic and laryngismus was associated with the tetany.

The third case was that of a colored man in whom the disease had occurred at intervals since early childhood. The spasms were severe and of wide extent, involving chiefly the muscles of the back and upper extremities. The individual spasms lasted one or two minutes, and were followed by complete relaxation for five or ten minutes. The anxious expression which frequently preceeds the muscular spasm, was present at times. Trousseau's symptom, the production of spasm by pressure upon the artery or nerve, especially of the arm, and the increased electrical excitability, Erb's symptom, were also noticed. The man was considered well in eight days.

The fourth case occurred in a girl three and one-half years old, four months after an attack of diphtheria. The case was of about eight weeks duration. The most prominent symptom was the constant flexion of the wrists, with considerable œdema about the joints. The diphtheria was followed by paralysis, which involved chiefly the muscles of the pharynx and lower extremities. While convalescing the tetany developed.

The fifth case was that of a baby girl six weeks old. The first symptom of tetany noticed was the contracture of the knee-joint, which continued without intermission for four weeks, when relaxation occurred and was followed by contraction at the elbows, with the wrists slightly bent, and the thumbs drawn into the palms. There was considerable gastro-intestinal irritability, and later, signs of congenital syphilis developed. The entire duration of the disease was four months with continuous spasm involving either the knees, elbows, or thumbs.

In a search through the literature relating to tetany, the author was able to collect seventy-two cases, his own not being included. Of these, thirty-four were above the age of puberty when the disease first developed; three were girls in whom menstruation had just been established; thirteen were children from two years to puberty; twenty-five were under two years of age, and twenty of these were less than one year old. Thirty-three of the patients were males and twenty-nine females; in ten the sex is not stated.

Lactation is mentioned as a possible cause in four; open wounds in six; psychic disturbance in three; menstruation developing or suppressed in four; digestive disturbance including two cases of dilatation of the stomach, in twenty-three; rheumatism or exposure to cold and wet, thirteen; exposure to heat, one; diphtheria, one; dentition, three; syphilis, one; masturbation, one; absence of thyroid, one; rachitis, five; adenoids in the naso-pharynx, one; phimosis, one. In some, two or more of these affections were present in the same individual. Pain was present in twenty-one cases. Among the principal symptoms and complications are mentioned, faintness, vertigo, herpes, tingling, numbness, formication, anæsthesia, temporary paralysis, epilepsy, eclampsia, tinnitus, and laryngismus, the latter being associated with the tetany in seventeen cases.

European observers find laryngismus and tetany very frequently associated and Cheadle believes laryngismus, tetany, and eclampsia to be different expressions of the same condition. Fifteen of the seventeen cases of laryngismus were in children under one year of age. The spasm was intermittent in thirty-eight cases, and continuous in thirty-five.

The treatment consists in sedatives to the nervous system or is directed against the exciting causes of the disease.

Schafer: The Persistence of the Loeffler Bacillus after Recovery from Diphtheria. (*Brit. Med. Jour.*, No. 1776.)

Ten c.cm. of antitoxin were administered to each of two school boys, aged thirteen, who were suffering from diphtheria. The diagnosis of diphtheria in each case was confirmed by bacteriological examination. The dose was repeated in twenty-four hours, and both made an uneventful recovery. No trace of the membrane being present on the third day. Some of the tonsillar mucous were examined from time to time, and up to the fifth week after the disappearance of the membrane, they afforded on cultivation, abundant colonies of the Loeffler bacillus. After the fifth week they were not found. Another boy of about the same age had an attack of "Tonsillitis," which was only recognized as diphtheria two months later, when the characteristic paralysis developed. The mucous from this boy's throat was sent for examination seven and one-half months after the attack, and was found to present numerous colonies of the typical Loeffler bacilli in serum cultivations. These cultivations have since been used successfully for inoculation of animals.

Gebhard: Traumatic Hæmothorax in the Newborn. (*Medical News*, Vol. lxvi., No. iii.)

The author has reported in the *Zeitschrift für Gebintshulfe und Gynakologie* the case of an infant born with some difficulty with artificial aid. The resulting asphyxia was overcome by the institution of artificial respiration, but death took place three hours after birth. Upon the removal of the sternum, a teaspoonful of liquid and dark-colored blood escaped from the right pleural cavity, and two teaspoonfuls were additionally removed. Beneath the epicardium and near the coronary sulcus and the apex of the heart, were several small extravasations, while over the upper lobe were several smaller ones. Upon removal of the thoracic viscera, the pleura of the posterior wall of the right half of the chest was observed to be elevated by an effusion of blood extending along the vertebral column from the first to the sixth rib. Over the head of the second rib was a tiny wound of the pleura, through which blood escaped After careful removal of the pleura it was found that the second intercostral vein was ruptured at a point a few millimeters before its entrance into the azygos vein. There was no interruption in the continuity of the ribs or of the costo-vertebral articulations, although there was undue mobility of the head of the second rib in its articular capsule. The injury to the vein, with subsequent hemorrhage into the pleural cavity, was ascribed to the manipulations necessary to establish respiration, with the result of causing such compression of the lung as to lead to death.

Olivier: Hæmophilia at the Onset of Menstruation.

(*Medical News*, Vol. lxvi., No. v.)

Olivier has reported the case of a girl thirteen years old, who had just menstruated for the first time. The discharge was slight at first, but subsequently became so profuse as to threaten life. All other measures failing, the vagina was tamponed and the flow was moderated. Upon the removal of the tampon at the end of twenty-four hours the hemorrhage was resumed with its previous freedom. Vaginal injections of hot water were employed and followed by the introduction of a tampon, but without success.

Upon consultation, the conclusion was reached that the girl was a hæmophilic. It was learned that when a child, she had fallen, injuring the head, and a large ecchymosis had formed beneath the scalp. The removal of teeth at different times had also always been followed by free bleeding.

The following plan of treatment was outlined: 1st, vaginal injections, at a temperature of 122°, every two hours; 2d, if the hemorrhage persisted, galvano-caustic intra-uterine application of fifty milliampéres, followed by a tampon; 3d, treatment directed toward the general condition, especially alcohol in some form; 4th, the hourly administration of hydrastin. In this way it was hoped to control the immediate bleeding. The question also arose as to its repetition in the future. The removal of the ovaries in the hope of obviating such repetition was contra-indicated by the danger of fatal hemorrhage from the operation.

Sextuplets. (*Medical News*, Vol. lxvi., No. xii.)

A well authenticated case of sextuplets is reported from Italy. A woman, thirty-six years old, presented in the fourth month of her second pregnancy, enlargement of the abdomen equal to that ordinarily observed at the end of normal pregnancy. While straining at stool on the one-hundred-and-fifteenth day, the membranes ruptured, a foot prolapsed, and a fœtus was delivered by a midwife. After a brief delay a foot was again brought down, and a second fœtus was delivered, and successively a third, a fourth, a fifth, and a sixth. All of the children were born alive, and moved vigorously for a time. Four were males and two females. There was a single placenta and six amniotic sacs. A year later the woman gave birth to healthy twins, which lived.

Sinkler, Wharton: On Lead Palsy in Children, with a Report of Three Cases. (*Med. News*, Phil., lxv. 85).

The symptoms of lead poisoning in children which have been most frequently noted, are disturbances of digestion, such as colic and vomiting; and the cerebral symptoms, indicated by headache, convulsions, and stupor. Chronic lead-poisoning is most likely to be manifested by a general loss of flesh, failure of appetite, and the earthen hue of the skin, with a jaundiced condition of the conjunctiva. In chronic lead-poisoning disorders of digestion are most common; constipation, attacks of colic and vomiting frequently occur, and there is other evidence of derangement of the stomach in the defective assimilation that exists. In other cases symptoms of kidney-disease are present; and it is well known that there is a form of nephritis due to accumulation of lead in the kidneys.

The symptoms dependent upon disease of the nervous system due to lead-poisoning are motor and sensory. The most common of these, of course, is paralysis of the extensor muscles of the fore-arms. In children, however, it is a noteworthy fact that the paralysis is as liable to affect the lower extremities as the upper. There are but few cases reported in which sensory disturbances have been met with in children. Cerebral symptoms are not uncommon in children. The lead encephalopathies in children have been frequently met with, especially among the cases reported by Stewart, and Putnam refers to other cases.

Three cases are reported, a girl, aged ten years and six months, and her two brothers, aged respectively six years and three years.

In neither of these children was any blue line on the gums observed, or any diseased condition of the teeth or gums. The digestive organs were in fairly good condition on admission to the hospital, and although the children were thin and pallid, there was no distinct saturnine cachexia noticeable. Nor could any lead be discovered in the urine, neither before nor after the internal administration of iodide of potassium.

The symptoms presented in all three cases were those of a polio-myelitis, and the resemblance of lead-palsy in children to polio-myelitis has been noted by several writers; and it seems possible that some of the cases that have been recorded as instances of polio-myelitis may have been due to chronic lead-poisoning.

The pathology of lead-poisoning in children is generally considered as consisting in changes in the peripheral nerves; and these alterations are very closely allied to those met with in the ordinary forms of multiple neuritis. There is good reason to believe, however, that in many cases of typical lead-paralysis the symptoms are due primarily to the direct action of the lead upon the muscles. It is also probable, and this is also suggested by Putnam, that chronic lead-poisoning may produce typical changes in the anterior horns of the spinal cord, and thus give rise to a poliomyelitis, identical in its symptoms with the acute, or, so to speak, idiopathic form of the disease.

James, W. Dale: A Case of Congenital Xanthoma Multiplex. *(Brit. Med. Journ..* 1894, ii., 805).

S. T., aged three and a half years, female. The plaques are distributed as follows: On the right upper eyelid, right side of nose, over the mesian line of the upper lip, the lower end of breast bone, right subclavian region; at the back, on the right side of the dorsal vertebræ, and on the left lumbar region. Besides these there were five on the hairy scalp. The mother declares that at birth they were plum color, and that this gradually disappeared so that (in August, 1892) there was nothing characteristic in their appearance. They were sharply elevated masses of a pale flesh color, and having a few vessels running over their surface, One had then been removed by the surgeon in attendance. The mother objects to further incision, so that no microscopical examination has been made. There is, however, now no doubt as to its character, as the plaques are perfectly typical.

There are some further points of interest to be mentioned. The mother says that the places grew during two years, but have not increased since. During the time the child was at the Children's Hospital, Sheffield, the plaques in the scalp certainly varied in fulness from time to time. Sometimes they were nearly level with the scalp, apparently undergoing atrophy; at others standing well above the level of the skin. Now, these seem to have undegone a real involution. They are never raised at all; they look like yellow hairless scars, and to the finger the skin feels thin and atrophic. The plaques upon the eyelid, nose, and lip are certainly less prominent, both as to elevation and color, than they were a year ago. Those in the right subclavian and left lumbar regions seem to me to be just as when seen formerly, save in color, which is now typical. There was at no time any jaundice, heart disease, or any other organic lesion discoverable; but the child was ill-nourished and difficult to feed. It is now bonnie enough, and is described by its mother as "quite hearty."

Thornbury, Frank J.: Ichthyosis Hystrix. *(Buffalo Med. & Surg. Journ.*, xxxiv., 136).

A very exceptional case of ichthyosis hystrix was seen by the writer in Kaposi's clinic in a child, four years of age, in which the body and extremities were completely covered with veritable spines of horny growth. Most of such cases are congenital, and in one instance a whole family, composed of several members, were affected with this disease. They traveled over all Europe, at the beginning of the present century, as objects of curiosity, and were known as the porcupine men. The name of this family was Lambert. The individuals actually resembled porcupines, as did the child in this report. The epidermal accumulations upon these patients sometimes reach the height of a centimeter, and may be still larger. Extensive desquamation is usually in progress, and the bed in which the patient lies is found covered with scales and broken-off masses of horny substance. Usually, the skin becomes intensely pigmented, so that the appearance of the individual is very striking and characteristic.

Kunkler, C.: The Treatment of Gastro-Intestinal Diseases in Infants. (*Med. Week.*, lxvi., 2.)

It frequently happens that astringents, even when strongly indicated by the condition of the bowels, must be abandoned because of the gastric irritation to which they give rise, impairing the appetite and digestion, and thus contributing to the already reduced nutrition of the patient. Tannigen is free from these disadvantages, for, as it is not decomposed in the stomach, it is entirely devoid of irritating effects upon the gastric mucous membrane, and for the same reason exerts its full astringent action in the intestinal canal. The author has used it largely in the wards of Dr. Schultze at Bonn, especially among children. It was administered to children under one year in doses from 10 to 20 centigrammes, three or four times daily, and to older children and adults in doses of from 15 to 50 centigrammes, repeated several times in the twenty-four hours. The results of the treatment were excellent, the diarrhœa and other gastro-intestinal disturbances rapidly ceased, even in cases which had resisted administration of calomel, naphthalene and, bismuth.

Benesch: Chlorhydrate of Pilocarpine as an Antidiphtheritic. (*Journal de Médicine de Paris*, Vol. vii., No. ix.)

Eighteen cases of diphtheria were treated with injections of a two per cent. solution of chlorhydrate of pilocarpine. The doses were half a cubic centimetre for children, and one cubic centimetre for adults; gargles of chlorate of potash were used at the same time. Recovery occurred in all cases, some of which were grave. The author, in comparing these results with those obtained with serum therapy (Behring's), concludes that his treatment is the preferable one, since the remedy begins to act in five to ten minutes, while it requires twenty hours for the serum action to become manifest.

Claus: Trional as an Hypnotic for Children. (*Journal de Médicine de Paris*, Vol. vii., No. x.)

In cases of insomnia resulting from various nervous causes (chorea, night terrors), as well as from some respiratory and digestive disturbances, trional is an excellent hypnotic. The dose varies from 20 to 40 centigrammes for infants under one year old; from 40 to 80 centigrammes for children between one and two years; and from 80 centigrammes to one and one-half grammes for children between two and ten years. The drug is well borne, and exerts a favorable influence upon the digestive functions. It should be administered fifteen to thirty minutes before bed-time, in warm milk, or better still, in honey, or in the form of bonbons. Sleep supervenes in ten to fifteen minutes.

Ferreira: Some Clinical Peculiarities of Grippe-Broncho-Pneumonias in Children. (*Rev. Neus des Mal. de l'Enf.*, Vol. xiii., No. 3.)

Three marked peculiarities were observed: 1. Slight elevations of temperature, 37.6°, or even 37° C.; this seems to point to a paralysis of the thermogenic centres by the influenza germ. 2. Early tendency to bronchoplegia and pulmonary collapse, apparently due to a general adynamic condition, resulting from complete depression of the vital powers by the toxines of the grippe. 3. Extraordinary slowness of the course of the disease, the evolution of the bronchitis or broncho-pneumonia remaining stationary indefinitely. The author condemns the use of emetics, as being a powerful factor in the production of pulmonary collapse, and in the increase of the general prostration. The indication is to use stimulating expectorants early, thereby exciting the bronchial muscle fibres, and to reanimate the innervating powers by means of alcohol, caffeine, and injections of camphorated oil. This treatment must be pursued energetically from the very onset of the attack in order to be successful.

Galezowski: Hereditary Ocular Syphilis. (*Annales d'Oculistique*, Vol. cxiii., No. 1)

Many congenital ocular affections should be referred to hereditary syphilis, and can be divided into the following groups: 1. *Malformations of the protective organs of the eye, of the orbit, and of the lachrymal canals.* These are quite rare, and their syphilitic origin may be proved by the simultaneous existence of lesions in the choroid and in the iris. 2. *Paralysis of the motor nerves of the eye; ptosis; nystagmus*, etc. This class of lesions, frequent in very young children, is of cerebral origin or consecutive to infectious fevers, traumatisms, etc.; in the absence of well-defined symptoms, it is necessary to search for syphilis in the cerebro-spinal axis. 3 *Arrest of development; microphthalmia, astigmatism*, etc. A large proportion of these cases are due to syphilis, and the ophthalmoscope reveals characteristic changes of syphilis in the choroid and retina. 4. *Inflammatory changes of the external and internal membranes of the visual organ.* These include interstitial keratitis and retinitis pigmentosa.

Le Gendre: Albuminuria and Nephritis of Children. (*Ref. in Rev. Neus. des Mal. de l'Enf.*, Vol. xiii., No. iii.)

The author separates albuminuria, due to various causes, from true nephritis. In the newly born, albuminuria is often due to difficult labor, to beginning asphyxia, or to sudden changes in the circulation at the moment of birth. This condition is temporary, and requires no special treatment.

In older children albuminuria, without nephritis, is present in certain pathological conditions, such as eczema, impetigo, angina, stomatitis, etc. The most frequent cause is digestive disturbance, with auto-intoxication and insufficient hepatic activity. Alimentary hygiene and intestinal antisepsis are the cures for this kind of albuminuria.

The albuminurias of adolescence requires further investigation. Treatment consists in diet, fresh air, friction, salt or sulphur baths, and as drugs, phosphates and strychnine.

In albuminuria due to nephritis, the real lesion is due to the action of toxines upon the kidney; and the kidney symptoms following the administration of Roux's serum can be explained in the same way. As to treatment—milk diet, purgatives, intestinal antisepsis, frequently repeated cold sponging, and friction, suffice to prevent accidents for the most part. The only useful drug is caffeine, and in uræmia nothing is efficacious except bleeding.

II.—SURGERY.

Steele, D. A. K.: Sarcoma of the Kidney in Children. (*Medicine*, Vol. 1., No. 1.)

Recent literature contains many cases of this character, the mortality following operation being forty-five per cent. The author reports four cases occurring in his own practice, and reviews carefully other recorded cases. As these tumors grow rapidly, and often attain an enormous size, destroying life by their mechanical progress, it is important that they should be recognized early, and receive prompt surgical treatment. Medical treatment is utterly unavailing.

In reaching a correct diagnosis, we depend in the first place, upon the presence of a tumor of rapid growth, springing from the loin, and displacing the abdominal contents forward and to the median line. Pain is an inconstant symptom, and, when present, is usually due to secondary causes, as intestinal obstruction, pressure upon adjacent viscera, or compression of ureter; when present as a primary symptom it indicates a hard tumor; it is uniformly absent in the soft, rapidly growing ones. Progressive emaciation is uniformly present, at first not very marked, but as the tumor increases in size, it becomes one of the most prominent symptoms. Indeed, Hennoch directs attention to the presence of an abdominal tumor and progress of emaciation as being the two most reliable symptoms of sarcoma of the kidney in children. The complexion is usually sallow, sometimes cachectic, and the little patients complain of great weakness, being unable to take any exercise, or to indulge in former games or amusements. Occasionally hematuria is present. Irritability of the bladder is also an occasional symptom. As soon as the tumor has attained considérable size, pressure symptoms, with displacement of viscera, attract our attention. Then we may have nausea, vomiting, constipation, œdema, dyspnœa. The presence of a smooth, solid, ovoidal, indistinctly fluctulant tumor in one side of the abdomen, traceable to the loin, producing bulging in the flank, and displacing the colon forward and to the median line, is almost positive evidence of a sarcomatous growth, especially when the history only extends over a few weeks. The disease is usually fatal in from six weeks to six months, although occasionally the patients survive a year or more. The softer the tumor, the more rapidly fatal.

After a careful study of these cases, the author arrives at the following conclusions:

1. These new growths of the child's kidney are often congenital.

2. They are usually unilateral; when bilateral it is from secondary infection of the other kidney.

3. They are primarily extra-renal, and surround rather than infiltrate the renal tissue.

4. Round-celled is the most common form of these sarcomas.
5. They are of exceedingly rapid growth, and destroy life by exhaustion.
6. They are uniformly fatal when treated medically, the duration of life being from four to twelve months from the time the disease is first observed.
7. Nephrectomy offers the only hope of cure or prolonging life in these unfortunate cases.
8. More accurate early diagnosis and prompt operative interference has lowered, and will continue to lower both the primary and secondary mortality.
9. The extra-peritoneal route is preferable when the tumor is small.
10. When large, a trans-peritoneal incision is imperative.
11. It may be either transverse or vertical; considering the nerve supply of the parts, the transverse would seem the better.
12. The operation of nephrectomy in these cases is justifiable, and we are not doing our duty as surgeons to our little patients if we withhold the only chance they have for life.

Buchanan, J. J.: Nephrectomy for Sarcoma in a Child of Two Years—Recovery. (*Medical and Surgical Reporter*, 1895. Vol. xxii., No. 16.)

The history of the case is typical. When the child was about nine months old, an enlargement could be felt by the parents in the left side of her abdomen, which gradually increased till it filled the entire left half of the cavity, from the border of the ribs to the groin, and encroached far beyond the median line. No urinary symptoms were at any time exhibited. Of late the child had declined in health and weight, and when operated on was in a very debilitated state. The growth was smooth, elastic, and slightly movable. It gave all the physical signs of a solid mass.

The incision for its removal was made in the left semilunar line, and was rapidly enlarged to an extent sufficient for the extraction of the mass. When the tumor was exposed, it was found to have developed between the folds of the meso-colon; and the descending colon was stretched over its entire anterior surface, from above downward.

A longitudinal incision was made through the external fold of the meso-colon, parallel with the bowel, and the bowel and the meso-colic covering of the tumor were peeled away till the base of the growth was reached. A satisfactory pedicle was secured, consisting of the ureter and the vessels supplying the kidneys. This pedicle was tied with silk, and dropped. Only one vessel in the mesentary required ligation. The entire loss of blood did not exceed an ounce.

An examination of the single fold of meso-colon, which was now attached to the descending colon, showed that it probably carried vessels sufficient to nourish the bowel. A temporary packing of gauze was placed in the cavity till the external wound was almost closed. This was finally removed, and found dry, and the incision closed without flushing and without drainage. The tumor weighed six pounds, and sprang from the upper portion of the kidneys, which could be easily identified in its lower two-thirds.

Werder, X. O.: Nephrectomy for Sarcoma of the Kidney in a Child Twenty-five Months Old. (*Medical News*, Vol. lxvi., No. 2.)

At a recent meeting of the Allegheny County Medical Society, Dr. Werder reported the case of a girl, twenty-five months old, that came under observation on account of a small umbilical hernia which had been present for three months. Examination, however, disclosed also a growth in the left hypochondriac region, somewhat larger than an egg. The tumor grew rapidly until it occupied the greater part of the left half of the abdominal cavity, extruding from the ribs to the crest of the ileum, and downward into the left iliac fossa, and filling out the left lumbar region. The tumor was not sensitive to touch, and was slightly movable in an antero-posterior direction. The child was plump and healthy in appearance, although there had been some wasting. A diagnosis of malignant disease of the left kidney was made, and nephrectomy advised. Accordingly, an incision about six inches long was made in the left semilunar line, and subsequently enlarged an additional two inches. The peritoneum over the tumor was incised, the very thin surrounding fatty capsule opened and peeled off, and the tumor lifted from its bed, together with the kidney, which was behind and continuous with the growth. The pedicle was ligated at the hilum of the kidney, and included all of its structures; several bleeding points were ligated; the cavity was carefully sponged out, and closed without sutures. The abdominal wound was united with silkworm-gut sutures, without drainage. Urination took place spontaneously about two hours afterward, and during the night about ten ounces were passed. The child was dismissed from observation fifteen days after the operation, and subsequently gained considerable flesh. The growth proved to be a sarcoma originating from the kidney.

Le Denter: Traumatic Epilepsy. (*American Journal Medical Sciences*, cix., No. 274.)

Le Denter gives *(La Presse Médicale)* the following as the known causes of traumatic epilepsy:

1. Fragments of bone resulting from fracture of the skull; these may cause epileptiform convulsions immediately after the trauma.
2. Bony outgrowths due to traumatism of the cranium may cause epilepsy. This is, however, a rare event, as when a slow compression occurs the brain accommodates itself to the new conditions.
3. Meningeal cicatrices, following lacerations of the membranes by bone fragments. They are at first soft, but later are apt to become hard and adhere to the surface of the brain, when they are capable of determining epileptiform attacks.
4. It is the same with incipient chronic meningitis, which ends in sclerosis of the membranes.
5. Cysts resulting from intracranial hemorrhages occurring at the point of the fracture may cause attacks of epilepsy.
6. Arterio-venous aneurism, a case of this kind has been described by Warnots of Brussels. He diagnosticated a blood cyst in a case of epilepsy which had been preceded by traumatism, and on opening the skull found the above lesion. The bone was not replaced, but the scalp was sutured. The patient was cured.

In operating for traumatic epilepsy it is not sufficient to remove a disk of bone; but if no lesion is found, the dura should be incised to permit of inspection of the subjacent parts, and even incision of the cortex of the brain may be practiced, although the latter is generally followed by more or less lasting paralysis.

ARCHIVES OF PEDIATRICS.

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Original Communications.

SOME FORMS OF ERUPTION SIMULATING SCARLATINA.*

BY A. D. BLACKADER, M.D.,

Montreal.

In presenting the notes of the following cases to this society I feel that an apology is in order. There is nothing new in what I have to say, and probably were I to search the columns of our medical journals for a few years back, I might find cases similar to the ones I now present to you.

My chief object in writing, when I proposed the paper, was to emphasize the fact, recognized I admit in some text books, but very much overlooked by the general practitioner, that the mere presence of a scarlatinal rash, going on to desquamation and associated with pyrexia, does not of itself warrant the diagnosis of scarlet fever; not even although it should present a certain amount of superficial tonsillitis. Cases will occasionally arise in which with our present knowledge an absolute diagnosis is impossible until some days have elapsed. In such the public should be educated up to the necessity for caution, and to the recognition of the difficulties that may occasionally lie in the way of a prompt decision, and at the same time the physician should be extremely cautious for the first few days lest he too rashly condemn a child to a six or eight weeks' quarantine, and a family to all the suspense and worry connected with such a proceeding, when caution, time, and frequent careful observations on the course, and exact symptoms of the attack, might make it evident that prolonged isolation was unnecessary. Moreover, every hospital, especially every infectious hospital, should have numerous isolation rooms where doubtful cases can be detained for a time until the diagnosis becomes absolute. On receiving the programme for the meeting, however, I found I was put down for a paper on *forms of eruption simulating scarlatina.* I have, therefore, slightly altered the arrangement of my notes to make them correspond more exactly to the subject allotted me.

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*Read before the American Pediatric Society, Virginia Hot Springs, May 28, 1895.

Among the simplest of the scarlatiniform rashes, and among the least liable to give rise to serious difficulty in diagnosis, are the scarlatiniform erythemata which occasionally result from the administration of certain drugs.

That an erythema closely resembling scarlatina may be produced by belladonna is acknowledged by all, but it is perhaps not so often seen as we might expect, considering the heroic doses in which the drug is occasionally given to children. A case in which this erythema was particularly well marked, occurred recently in Montreal, for the notes of which I am indebted to my friend Dr. A. S. Wade.

On the seventh of this month he was called to see a child five years old who had eaten surreptitiously fifteen sugar-coated granules of atropine, each containing one-one hundred and twentieth of a grain, in all one-eighth of a grain of atropine. On arrival he found the child in convulsions with skin dry and hot, and completely covered, literally from crown to sole, with a diffuse bright scarlatiniform rash, punctate in character, disappearing momentarily on pressure, and leaving a distinct white line after the finger nail drawn rapidly over it. The pulse was 160, weak and compressible. Before the convulsion the child had been delirious, and the pupils widely dilated. Under careful and prompt treatment, the symptoms abated, and on the doctor's visit on the following morning, the rash had faded, and the child was running round.

Salicylic acid and its compounds are more frequently credited with producing an urticarial rash than a scarlatiniform erythema. The following are the brief notes of a case in which a rash distinctly scarlatiniform in character was apparently due to this drug:

John H., aged seventeen, an anæmic lad, entered Montreal General Hospital, April 29th, suffering from ill-defind rheumatic pains, and very slight pyrexia. Under a few days rest in bed these passed away, and he was placed upon a preparation of iron. Following a sudden change in temperature a recurrence of the rheumatism took place, for which sodium salicylate, in fifteen grain doses, was ordered. On the third day he complained of a feeling of fulness in the head, while on the neck and shoulders, upper part of chest, and the flexor surfaces of the arms appeared a diffuse erythematous rash. By the following day the character of this rash was more pronounced. It covered all the trunk, extending as low as the inner surface of the thighs with a distinctly scarlatiniform erythema. On the forearms and lower part of the thighs it presented the appearance of scattered, slightly elevated, round or oval, spots, most of them of rosy color, but some of them with paler center, more urticarial in appearance, and in places tending to coalesce. There was no pyrexia, the tongue was clean, and the throat normal. The salicylate was now stopped, and *post* or *propter*, the rash faded, so that by the following day it had almost disappeared. No desquamation was noticed.

The rashes of phenacetin and phenazone are generally too patchy in character to give rise to any suspicion of scarlatina. The following case, however, which I attribute entirely to the action of the drug, gave rise for some hours to fear lest it might prove to be scarlatina.

Laura T., aged four years of neurotic temperament, and with a skin sensitive to slight irritation, was taken ill in the afternoon of April 11, 1893, with vomiting, severe headache, and pain referred to the right side. The child had been out for a long drive the previous afternoon with a sharp northeast wind blowing. I saw it about three P.M. and found a temperature of 101.5° F., pulse 120, respiration 26, and tongue slightly furred. The bowels previously had been quite regular, so a simple saline was prescribed. In the evening I found the child very restless, complaining of headache and pain in the side, but of both rather indefinitely. Careful examination revealed little beyond feeble breath sounds; the temperature was 102.8° F.; the pulse-respiration ratio was not much disturbed. I prescribed a four grain phenacetin powder. Early next morning I received an urgent message that the child was covered with a rash, and that the mother feared scarlet fever. I found the child easier, but the neck and upper part of trunk was covered with a distinct red rash resembling scarlatina. At the lower edge of the rash and on the lower limbs small round oval, erythematous spots appeared with definite and slightly raised margins. The tonsils were reddened, but not the soft palate. The temperature was 102° F., the pulse 108. By the afternoon the rash had begun to fade. A painful cough developed, and by the following morning indications of a distinct effusion were present on the right side. It ran a very rapid course, and I had to perform paracentesis on the sixth day owing to rather alarming pressure symptoms. I may add that in this child quinine, on two separate occasions, given in small doses, produced an urticarial rash.

Copaiba may also in my experience give rise to a rash which may in some degree resemble scarlatina.

Many other drugs are reported as having produced a scarlatiniform erythema. Among the more important, are oil of turpentine, iodoform, arsenic, chloral hydrate, mercury, santonin, ipecacuanha, sulphur, strychnine, and iodine. I have not myself seen a case resulting from any of these.

In an allied group to the rashes produced by drugs, we may place those transitory scarlatiniform erythemata due probably to the accidental absorption of some toxin from the alimentary canal, or elsewhere.

Amongst these, I should place the erythema which has been occasionally observed to follow the use of enemata. Several cases are recorded in which, within a few hours after the administration of a simple soap and water injection, a distinct scarlatiniform rash has made its appearance, at first about the neck and shoulders, and has then spread from above downwards over a large surface of the body;

this rash persists for a variable period, is never accompanied by pyrexia, but is generally followed by desquamation. Transitory erythematous blushes, or distinct rashes, are also occasionally noted in connection with cases of tonsillitis and diphtheria, and in septicæmic conditions in children.

The following is a very marked case, possibly due to a somewhat similar cause, which occurred in the family of my *confère* Dr. Gordon Campbell, of Montreal.

W. C., female, aged twenty-one, was suffering from pleurisy on the left side with effusion. On April 9th, the eleventh day of the illness, the amount of the effusion was at its maximum, reaching as high as the third rib anteriorly. There were no symptoms of interference with the circulation, or respiration. That evening the patient complained that an eruption was coming out on her face and neck. On examination by gas light, nothing was evident beyond a little roughening of the skin and flushing of the face.

On the following morning a rash extremely like that of scarlet fever, if not identical with it, was present all over the body, but more intense on the back and upper parts of the trunk. It was of a bright scarlet red color, and on close examination showed a punctate appearance on a uniformly red ground. The skin was not roughened and on drawing the finger nail across it, a white streak was left for an instant. The throat was not injected, nor did it feel at all sore or dry to the patient. The temperature which had been 100.6° F. for the previous two days remained the same. There were absolutely no symptoms referable to the rash except slight itching, which came on in the evening and was more pronounced the following day. The eruption persisted for five or six days, was quite as intense the second day as the first, and then gradually faded, remaining longest on the back. Desquamation consisting of fine branny scales was noticed as occurring on the face and legs and persisted for seven weeks. This patient had scarlet fever in infancy, and my friend was so positive of his ability to exclude definitely any form of infectious fever that he allowed his own child, ten months old, to frequently enter and remain in the room with the patient. No treatment was employed. The patient was taking at the time triturates of strychnia gr. 1-50 three times a day and was allowed to continue with them. There was nothing in the food taken which could possibly appear as the cause of the rash. Both diet and treatment had remained unchanged for the week previous to its appearance. Notwithstanding the rash the patient made a rapid uninterrupted recovery from the pleurisy.

Much more liable to give rise to error are occasional cases of erythema roseola which, although generally resembling rubeola, does occasionally in children assume over the greater part of the body a distinctly scarlatiniform appearance. These cases associated as they may be with a slight elevation of temperature and quickened pulse may give rise to some anxiety. The rash, however, is very transitory and I do not remember having ever seen a case where it was uniformly scarlatinal over the whole body; generally on the limbs or back, the rash assumes a distinctly morbilliform character. The throat in these cases is quite free from any inflammatory appearance.

Acute desquamative dermatitis is another condition under which we may have a well marked scarlatiniform rash, going on to desquamation, and associated with more or less pyrexia. The following is an interesting example, for the notes of which I am indebted to Dr. Shepherd, of Montreal.

Thomas Smith, aged sixteen, office boy, born in England, presented himself on the 9th of July, 1893, at the out-patient department for diseases of the skin, of the Montreal General Hospital, The following is an abstract of the notes taken at the time:

The lad is anæmic, and has never been strong. Three months ago, a scarlatiniform eruption appeared all over the body. It was associated with fever and vomiting. The fever lasted about nine days when desquamation set in, continued for ten days and then the boy got perfectly well. Two weeks previous to the present appearance he had a similar attack, followed by a similar peeling of the the skin to that which is now going on. This desquamation resembles very closely that of scarlet fever. There is no redness or inflammatory condition, but the skin is covered with fine white branny scales, and is very itchy. On the palms of the hands and soles of the feet there are large blisters, in size varying from that of a five cent piece to that of a silver dollar. These fill with watery serum and when this is let out, the piece of skin covering it becomes detached. No scab forms as in ordinary pemphigus. Numerous marks of previous blisters are visible. Over some of these spots the skin is in a cracked eczematous condition. There is also well marked eczema of the sides of the fingers. Under a course of arsenic the condition completely passed away and desquamation ceased. The following year, on the 24th of March the lad returned. Eight days previously he had had a distinct chill; on the two succeeding days he was "out of sorts;" and on the third day he felt sick at the stomach, and afterwards a red, uniform rash appeared and gradually spread until it covered the whole body. He felt hot and feverish. The rash remained out for three days, and began to fade the day previous to his presenting himself at the hospital. On examination the only evidences of the rash at the time were found about the thighs, which were covered with a uniform scarlatinal erythema. Both ears were covered with fine desquamating scales. The tongue was clean, but the papillæ were enlarged. The throat was not reddened and was said not to be sore. His principal complaint was of the itchiness of the skin. The temperature in the axilla was 100° F. A saline mixture was prescribed. The patient returned again in June of the same year with a very similar condition of the skin, and was placed on a course of arsenic, under which recovery took place.

The most important of these scarlatiniform rashes, because most frequently met with, and most liable to be mistaken, are those cases of rubella or rotheln which present a scarlatinal rash. In general, the exanthem of rubella more closely resembles measles than scarlet fever; but every now and then, more frequently in some epidemics than in others, cases arise when it is impossible to give an immediate absolute diagnosis. The rash on the first appearance may show no characteristic difference; pyrexia may be present and a varying amount of tonsillar congestion. In such cases the all important factor for correct diagnosis is time, and the following consideration will influence us:

Even in mild cases of scarlatina we find a more decided disturbance of the nervous system, than in cases with a similar amount of pyrexia in rubella. Drowsiness or marked irritability of the nervous centers generally precedes the appearance of the exanthem in the former disease, almost never in the latter. In rubella the rash especially after the second day, and on the lower extremities shows a distinctly patchy condition, with well defined and slightly raised margins, or sometimes assumes an almost morbilliform appearance, which is never the case in scarlatina. In scarlatina the pharyngeal congestion is always more or less present, and always bears a fairly definite relation to the amount of rash. In rubella the exanthem may be well marked while the congestion of throat may be slight, and limited to the tonsils. The post cervical glands are almost always enlarged early in an attack of rubella; if enlarged at all in scarlatina, it is only towards the close of the first week. In scarlet fever, even in mild cases, towards the end of the first week, we have a distinct loss of epithelium on the dorsum of the tongue, giving rise to the well known term "strawberry tongue." This of course is much more manifest in some cases than in others, but I believe always takes place. I have never noticed it in rubella. I cannot, for myself, place the same value on a quick pulse that some writers do. Like other symptoms it may occasionally deceive us. I have seen cases of undoubted scarlatina, where the pulse, though quickened, was only moderately so. The incubation period can only be of value to us where several cases occur successively in the same family.

In all such cases we should insist on absolute isolation, but claim time before we express our diagnosis, and as teachers, while emphasizing to students the danger incurred in overlooking mild cases of scarlatina, we should also point out not only the unnecessary expense and wrong to parents involved in stamping every case of scarlatinal rash, as the much dreaded scarlet fever, but also the actual danger to the child affected should it be sent to an infectious hospital. The following is a case in point, the particulars of which were related to me by a friend.

G. H., a lad of about seven years, when seen was covered with a well marked scarlatiniform exanthem covering the greater part of the body, which had appeared the day previously. The child did not look ill, and complained of nothing. His temperature was 100.5°, the pulse 96, and the tongue somewhat furred. There was no history of any prodromata. The case was declared to be one of scarlet fever, and the child sent to an infectious hospital. On the following day the temperature was almost normal, but on the next it rose suddenly to 106°F, and the child died in a comatose state the following morning. Two other children in the same family took ill, ten days after the first had been removed to the hospital. There was the same scarlatinal rash, slight pyrexia rapidly subsiding to normal, desquamation on the second week and rapid recovery.

236 MOUNTAIN STREET.

Lateral Curvature—I must warn you against promising too much from the treatment in cases of lateral curvature. Slight cases, at any age, in which the muscles only are affected, can be all cured in a few months. A second class of cases, in which osseous deformity is present to a slight extent, may also be cured, especially in children up to fourteen years. They can be improved in older persons. But in a third class we can promise only to prevent the deformity from becoming greater. In very young children only is even slight improvement possible. The osseous changes are too confirmed. It is only right to say, however, that some remarkably satisfactory results have followed the treatment by forcible correction, as devised and carried out by Lorenz, of Vienna, Bradford, and others. They think it not impossible, in even advanced osseous deformity cases, to force the convexity back and undo, as it were, the rotation, providing the patient is young. The principle of the method is, first, to fix the trunk in a frame, and then bring great pressure on the convexity by means of webbing, counter extension being meantime exerted on the opposite or projecting side of the pelvis. The body is partly suspended at the same time by means of an apparatus similar to that used during the application of Sayre's plaster jacket. The whole thing is cumbersome and expensive, and adapted only for hospitals or large institutions devoted wholly to orthopœdic work.—*T. G. Roddick, Montreal Med. Journal.*

TWO CASES OF SCARLATINIFORM ERYTHEMA.*

BY CHARLES GODWIN JENNINGS, M.D.,

Detroit.

To illustrate one of the diseases, not always easily differentiated from scarlatina, I report the following two cases:

CASE I.—This case was diagnosticated surgical scarlatina by the attending surgeon, and was reported as such in *The Physician and Surgeon*, April, 1895.

The case, to my mind, will not stand close analysis. I gave in consultation a dissenting opinion, and would classify it as scarlatiniform erythema. At least the diagnosis is open to question. I quote in abstract the clinical history of the case from the reporter's paper:

The patient was a boy, aged fifteen years, who had had scarlet fever when eight years of age. On February 15th he was taken with appendicitis, and came under the care of another physician. He was seen by the surgeon February 18th, and the next morning a laparotomy disclosed a gangrenous appendix and a foul abscess.

The patient did well after the operation; the fever subsided, and in two days the temperature showed normal in the morning, with a slight evening rise. As is usual in such wounds, there was for the first three days a very foul discharge, and the connective tissue exposed to its contact developed superficial sloughs. The discharge then ceased to be offensive, a good granulating surface developed, and the sloughs rapidly separated.

The boy was doing well in every way, and recovery seemed certain. On the evening of February 24th, nine days after taking to bed and five days after the operation, he had a chill, followed by a temperature of 100.5° F., and a pulse of about 100. [The chart of this case was unfortunately destroyed by the nurse, and it is impossible to give a verifiable record of pulse and temperature.] Castor oil was given at bed-time. On the morning of the 25th, the patient was depressed and nauseated, but did not vomit—temperature, 102° F.; pulse, 100. His throat was sore and his body broken out with a scarlet rash. In the evening the rash was more pronounced; the temperature was about the same as in the morning. By the morning of the 26th the eruption had spread over the whole body. His throat was covered with a red rash, and his tonsils were slightly swollen. His tongue, which on the first day had been coated white, with red edges, had now cleaned and showed the regular strawberry appearance of scarlet fever. The fever still continued, and, though not high, persisted, with the exception of a few hours, until his death, the temperature ranging thenceforward from 99 to 100 degress, and his pulse from 80 to 96.

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* Read before the American Pediatric Society, Virginia Hot Springs, May 28th, 1895.

The possibility of rubella was excluded, while the perfectly quiescent condition of the wound and abdomen put septic infection out of the question. The diagnosis of scarlatina was made accordingly, and the house placarded.

On the morning of the 27th, abdominal pain and vomiting ushered in what proved to be an intestinal obstruction that terminated fatally at 6 o'clock A.M., March 1st. The history of the complication has no bearing on the exanthem and will be omitted.

Post-mortem examination revealed a clean granulating wound, an aseptic abdominal cavity, an obstruction due to entanglement of the bowel in the cicatrizing wound, and engorged, dripping kidneys.

I saw the patient at 4 o'clock in the afternoon of the 27th, the day of the onset of the symptoms of obstruction, and seventy-two hours after the initial chill of the exanthem. At that time, the only remaining vistage of the exanthem was a small area of punctate erythema in each groin. The tongue was pale, showed no enlarged papillæ, and the mucous membrane of the mouth and throat were normal in appearance. From the condition of the child, as I saw him, and from a careful study of the clinical history from the beginning of the disease, I expressed the opinion that the child had not had scarlatina. My reasons from dissenting from the diagnosis of the physicians in attendance were:

(1) The previous attack of scarlatina.

(2) The absence of exposure to contagion. A period

of incubation as long as nine days is so unusual, that it is safe to assume that if an isolated patient develop scarlatina as late as this, the disease has been brought to him by his attendants or other persons coming in contact with him. No such possible exposure could be traced in this case.

(3) The extreme divergence of the clinical phenomena from that of even a mild scarlatina.

On the day of the development of the rash, the second day of the disease, in addition to the sharp febrile temperature and eruption, the diagnosis of scarlatina will depend upon four associated phenomena, viz.:

(*a*) The vomiting.

(*b*) The peculiar tongue, coated white, with prominent red papillæ.

(*c*) The injected, sore, and often pseudo-membranous throat.

(*d*) The peculiar rapid pulse.

The vomiting is the least constant of these symptoms, occurring in about eighty per cent. of the cases. The peculiar tongue can be depended upon in all but the mildest cases. It is rare that the accurate observer will be in doubt. My own experience leads me to place much reliance upon this symptom. The injected throat is always present. The rapid pulse, rapid out of proportion to the temperature, and other phenomena, I have learned to look upon as a pathognomonic of scarlatina. A pulse of 140 to 160 is usual. According to my observation, a pulse below 120 in a child is of extreme rarity, even in the mildest cases, and a pulse of 100 or below would, in the absence of known exposure and an otherwise typical course, exclude scarlatina.

In the case under consideration, the temperature, 102° F. on the second day, and the well developed rash, marks a well defined case of scarlatina, and unless the state of surgical convalescence modified the course of the disease in a remarkable manner, the other clinical phenomena should be as well defined. Instead of that, the history is most erratic. On the morning of the second day there was nausea, but no vomiting. The castor oil of the night before might have caused this. There was a slight sore throat, but that was gone in twenty-four hours. The report states that the tongue presented the characteristic appearance of scarlatina—coated white, with red edges on the first day, cleaning off and presenting the strawberry appearance on the second. Here, however, comes a question of accuracy of observation. The tongue of scarlatina does not go through these changes with that rapidity. Not before the third or fourth day is the white coating off, and the red strawberry tongue presents most characteristically on the fourth or fifth day of the disease.

When the case came under my observation at the end of the third day, the tongue, mouth and throat were perfectly healthy. The maximum pulse-rate had been 100, and that only on the second day, when the temperature held at 102° F. Whatever influence the surgical state might have upon the rash, and the other phenomena of an intercurrent scarlatina, it is difficult to conceive such an effect upon the pulse. With a temperature of 102° F. it should have been at least 120. By the end of the third day the temperature had dropped to 99.5° F., the pulse to about 80, and every phenomenon characteristic of scarlatina had disappeared. If the case were scarlatina, the disease was aborted, and the characteristic symptoms profoundly disturbed by the surgical complication.

In consideration of the previous attack of scarlatina, and the absence of exposure, I believe it to be more rational to diagnosticate it as scarlatiniform erythema. The etiology of the case is not clear. Toxic absorption from the sloughing wound may have been the cause.

At the autopsy the reporter attached much importance to the engorged kidneys as confirmatory of the diagnosis of scarlatina. As the report shows, the attending physician found the urine normal two days before the patient's death. The renal congestion must have been, therefore, a late phenomenon, and related rather to the cause of death than to the exanthem. It was too early for a scarlatinal nephritis to develop.

One cannot look over the literature of surgical scarlatina without being impressed with the confusion that still exists on the subject. From a study of the literature it appears:

(1) That scarlatina does occur as a complication of surgical operations more frequently than the other specific diseases.

(2) That scarlatina so complicating surgical convalescence sometimes pursues an atypical course.

(3) That many isolated cases reported as scarlatina, and without histories of exposure, do not bear close analysis.

(4) That those cases that have occurred in groups, with clear histories of exposure, and which are undoubtedly scarlatina, have been so carelessly reported, that doubt still exists to what extent and in what manner the specific disease is modified by the surgical state.

CASE II was a sturdy boy ten years old. He had had measles, but neither rubella nor scarlatina. On March 26th, while dressing him, his maid found a rash on his face and neck. I saw him about an hour later. The rash simulated very closely the rash of scarlatiniform rubella. It was distributed over the whole face, neck, and down onto the front of the chest. The forearms and hands were also involved, although here the macules were sparsely distributed. The seat of the eruption burned and itched slightly.

The case bore at this time no resemblance to scarlatina, and the entire absence of constitutional disturbances, conjunctival and nasal irritation, and swollen postauricular glands, excluded rubella. Everything so certainly excluded one of the contagious eruptive diseases, that the boy was permitted to join a little class of five boys under the care of a tutor. A cathartic dose of calomel was administered. The child was seen again about 5 o'clock in the afternoon. He had become feverish, the rash had extended, and the parents were alarmed. The temperature was 99.5° F., the pulse 100. There was slight sore throat and a little nausea. The tongue was clean and smooth. The eruption had extended to the upper extremities and body, and both legs, from the hips down, were covered with a bright scarlet rash. A large area, including the lower half of the chest and the upper half of the abdomen, was free from rash; behind, the back was pretty well covered, save a streak between the scapulæ.

In color, and in every other way, the eruption below the neck was a perfect picture of a scarlatina rash. On the face it still retained the macular appearance of rubella. There was some itching and burning of the skin. The next morning showed the rash fading from the face, although more brilliant on the body and extremities. Below the waist it involved all the skin of the body and legs; above the waist were large patches of healthy skin. The temperature was 100° F., the pulse 112. The sore throat was better, the pharynx showing but a trifling redness. The tongue was slightly coated, and did not show prominent papillæ. There was no change in the condition of the child during the day. On the following morning, March 28th, the rash was fading rapidly and the constitutional symptoms were gone. He was permitted to be up about his room, and the following morning the rash had gone and he was convalescent. A fine furfuraceous desquamation took place.

At its height this case presented a very close counterfeit of scarlatina. Where present the rash bore a perfect resemblance to that of scarlatina. The large area of healthy skin on the upper part of the body, and the abundant rash on the face, however, were unlike scarlatina. The constitutional symptoms were too late in appearance, and were not commensurate with the intensity and extent of the eruption. The temperature was low, and the pulse comparatively slow. The tongue lacked the characteristic appearance of scarlatina; the sore throat was trifling and transient, and the nausea insignificant.

Considered alone or in connection with some of the associated phenomena, this rash could not be differentiated from scarlatina. With the complete history of the first two days the diagnosis was simple.

The etiology of the case was also obscure. Although there was no history of a distinct error in diet, the boy's maid permitted him liberties that might readily determine food fermentation, with toxic absorption. No treatment was employed other than the administration of the calomel and a tepid bath, morning and evening.

457 JEFFERSON AVENUE.

Cats and Diphtheria—Dr. Newsholme, in his recently issued quarterly report, devotes a separate section to a description of an outbreak of suspicious illness among cats in a particular district of Brighton. His attention was called to cats by the fact that in a part of Brighton, inhabited almost solely by the laboring classes, there had occurred a group of cases of diphtheria in the course of a single fortnight, which pointed distinctly to the operation of some local cause. The patients comprised both children and adults. They did not attend any particular school; there was no community of milk supply; personal infection from case to case could not be traced; and no sanitary defects were found in the affected houses. But in each instance there was a history that the household cat had been ill, and in several families the child who was specially fond of the cat was the sole victim of diphtheria. The illness of the affected cats had not been carefully observed, but it included one or more of the following symptoms: a bad cough, difficulty in swallowing, discharge from the nose, and marked emaciation. In some of the houses, the cat had simply been observed to be wasting. Four emaciated cats were secured, and necropsy, including a bacteriological examination, was made, but with entirely negative results. The illness of the cats in question dated from at least a month before the opportunity for examining them arose, so that the negative result is not surprising. It will be remembered, that Dr. Klein, in his investigation into cat diphtheria, found that the diphtheria infection produced in the cat an acute lung inflammation, the kidneys becoming degenerated in the manner known in man as the large white kidney. The condition of the household cat is worth inquiring into in all such local outbreaks, and it may be well to remember that if the cat can be secured for anatomical examination, even in the acute stage of the disease, there will probably be no exudation in the throat, but only marked pneumonia and possibly also renal inflammation.—*British Medical Journal.*

CASES OF ANOMALOUS SCARLATINA.*

BY LOUIS STARR, M.D.,

Philadelphia.

In the early Spring of 1893, in a family whose four children had been under my continuous observation since their birth, there occurred two cases of eruptive disease, whose characteristics were so peculiar that great doubt arose under what class to place them. Scarlatina was quite prevalent at the time. The first patient, a boy of six years, without prodromes of any kind, without appreciable elevation of temperature, no sore throat, and with a pulse practically normal, developed a slowly-spreading, erythematous rash presenting very peculiar characteristics to be later described, passed through an apyretic course, and began to desquamate on the sixth day, shedding large sheets of epidermis from an underlying surface of deep red skin. Scarcely had this desquamation begun, when a younger sister of this boy, without prodromata, and with a practically normal pulse and temperature, developed a similar rash, first upon the neck and upper part of chest, with reddened throat and very slight swelling of the cervical lymph glands. Though the rash exhibited peculiarities, the diagnosis here inclined to rubella, until on the sixth day desquamation began; first branny in character, but subsequently in large flakes, especially upon the chest, when the peculiar appearance of the underlying skin noted in the brother's case was seen again, though in less marked degree. While scarlatina was the final verdict in these two cases, the influence of some gouty inheritance might have been accepted as the most probable explanation, had not accident shortly brought under observation another family of three children, the first of whom passed through an eruptive disease presenting exactly the peculiarities of rash of the first two children, with slow pulse and practically normal temperature throughout. He was isolated from the other children, but rigid quarantine was not maintained. A servant who had come in contact with the child developed distinct scarlatina, and shortly after, the two remaining children developed typical scarlatina of mild grade. Finally, about the same time as the first three cases, a hospital case was seen which showed a similar rash, ran a mild febrile course, with lamellar desquamation, and exhibited nephritic symptoms during convalescence. There is thus to be presented a series of six cases, scarlatinal in character, beginning with one in which there was intense but anomalous rash, without additional symptoms, followed by three other cases of similar eruption, each one adding a few details to the classical picture, until finally two cases occurred in the family of one of these patients which stamp the series with the unmistakable impress of scarlet fever.

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*Read before the American Pediatric Society, Virginia Hot Springs, May 28, 1895.

CASE I.—John C., æt. six years. Grandparents and parents on both sides gouty in a marked degree. Patient had severe enterocolitis at age of three months, the attack lasting until his seventh month. Had at same time, and for several months after, obstinate eczema, most marked on face and scalp, but extending more or less over the whole body. After this, he enjoyed moderately good health and became robust in frame, but was always difficult to feed, and suffered at times from constipation and indigestion. In December, 1891, in his fourth year, he had an attack of epidemic influenza which lasted fully six weeks, and culminated in parotitis, first of the right, then of the left gland. The mumps spread to the other three children of the family. After this attack, though he required careful dieting, he remained well until May, 1892, when, with his sisters and brothers, he had measles, typical in character and course. During the following Summer, he was quite well.

Early in February, 1893, he had an attack of follicular tonsillitis, from which he recovered in a few days, but was left rather feeble for a week. During the next week, his health was perfect. On February 23rd, I was called in the evening to see a rash which had appeared after a warm bath. At the time of my visit, the pulse was 88, temperature 98.2°. The tongue was clean and the throat was normal in appearance. The child said he felt quite well, and a careful examination revealed no symptom save the rash. This was confined to the neck and groin. On the neck, it appeared as a bright, red erythema, its upper edges sharply defined, as if it had extended all round as high only as the collar worn in the day time; below, it faded gradually into the healthy skin of the breast and back. In the groins, the redness was more intense, but toward the margins showed some punctation. The scrotum was involved, so also the penis, and there had been at the last attempt some little difficulty in passing water. The area of skin involved was like a belt around the whole trunk, buttocks, and thighs, the lower and upper edges fading gradually into sound skin. The whole of the involved surface was somewhat swollen, the penis and scrotum markedly so, and there was moderate itching.

February 24th.—Rash extended to rest of trunk, but still most intense in original portions. Redness more intense than in ordinary scarlatina, is uniform, punctation having disappeared. Pulse 84; temperature normal.

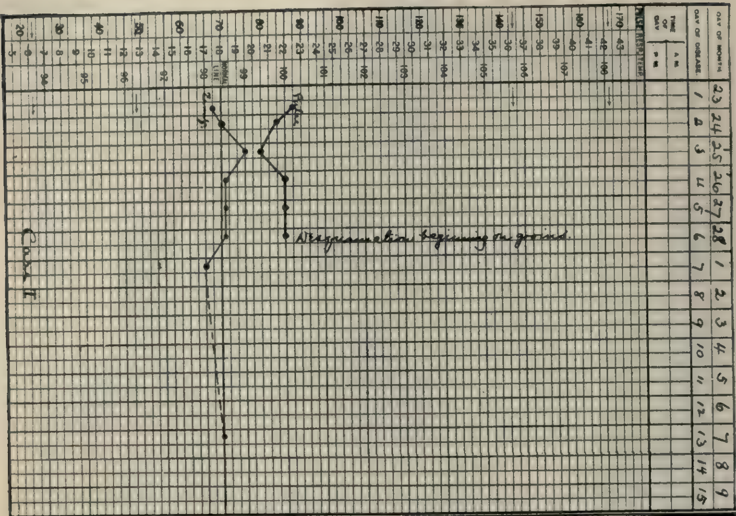
Feb. 25th.—Rash extending down legs. In advance of redness and over the dorsum of the feet, which are somewhat swollen but do not pit, cutis anserina is noticeable. Pulse 80; temperature 99°. Scrotal swelling lessening. Creases in groins, and between buttocks quite raw and painful. Patient disinclined to sit up in bed on this account.

Feb. 26th.—Rash extending, but redness still more intense in original portions and over whole trunk. Pulse 86. T. 98.5°.

Feb. 27th.—Hands, feet, and face becoming involved. Palms and soles have a peculiar, purplish-red hue, and are very shining. Pulse 86; T. 98.5°. Slight sick stomach and coated tongue; first symptom quickly relieved by calomel in small, divided doses.

Feb. 28th.—Desquamation in sheets over groins, swelling of scrotum gone, and raw surfaces much improved. The skin in places shows empty vesicles about twice the size of a pin's head. P. 86; T. 98.5°. Urine normal, but very acid.

March 1st.—Hands, feet, and face completely involved by the eruption. Desquamation progressing on trunk. The skin bared by the desquamation is extremely red in color. P. 86; T. 98°.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NORMAL LINE
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Pulse
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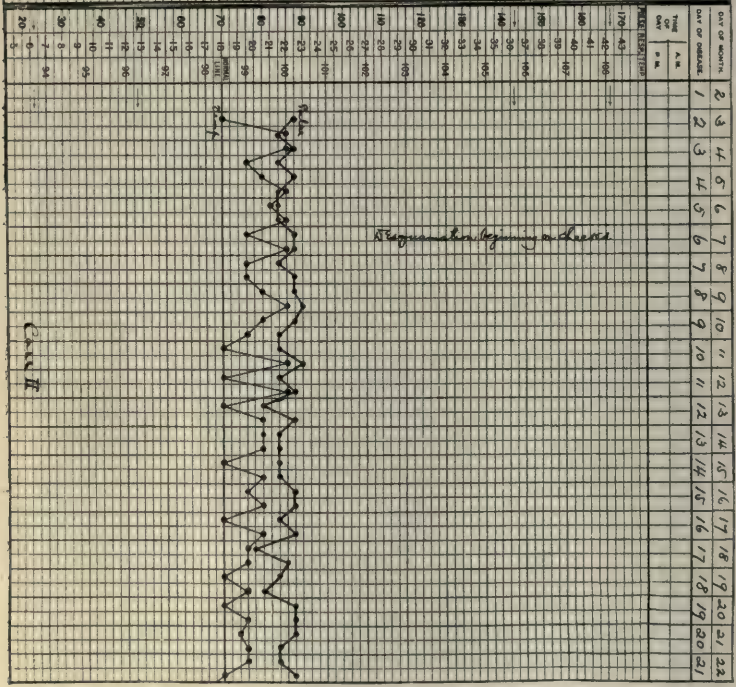
Desquamation beginning on groins.
Case I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2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
Pulse
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Desquamation beginning on chest.
Case II

March 3rd.—Appearance of secondary branny desquamation.

March 4th.—Desquamation beginning on legs.

March 6th.—Hands peeling in immense flakes; skin left purplish red.

March 7th.—Face becoming more natural in color; hands, feet, and legs very red; trunk still pink and covered with branny scales. Urine shows abundant deposits of lithates. Pulse and temperature normal; tongue clean. Patient clamoring to get up and to have solid food. In places, the new skin shows slightly elevated, purplish-red maculo-papules, and all new skin shows a secondary branny desquamation.

March 9th.—Face looks rather pale; condition in other respects normal. Hands completely peeled, palms intensely red, and skin looks tender, but can be freely handled without pain. Sole of right foot almost completely desquamated, resembling the hands; left sole still intact, but epiderm loose. Surface of rest of body pink, and covered with branny scales.

March 15th.—Improving. Redness less marked.

March 19th.—Practically well. Very slight branny desquamation over trunk. Skin feels soft, and more healthy than ever before.

CASE II.—Hope C., æt. eight years. Sister of Case I. Has always been healthy. Had mumps and measles at same time as Case I. No tendency to skin disease. Had slight digestive disturbance during January and February, 1893, and slight bronchial catarrh in the latter month. On March 2nd, 1893, seven days after the onset of her brother's illness, having previously been in perfect health, a rash appeared on the neck and upper part of the chest, coming out after a warm bath. On March 3rd, the rash was a uniform, itching and burning purplish-red erythema, involving chest and back and both cheeks, which were swollen quite perceptibly. The anterior half-arches and tonsils were erythematous; the cervical glands slightly enlarged. Tongue clean; pulse 88. Feels well and takes food well.

March 4th.—Rash extending over whole trunk. Face still swollen.

March 5th.—Rash extending to thighs and arms. Over chest and back, a few slightly elevated, scattered, flat papules of darker color were observed. Urine normal.

March 6th.—Rash extended to knees and elbows. Throat has lost its redness. Tongue perfectly clean. Face not swollen. Below the knees and elbows, in advance of rash, cutis anserina quite marked, as in Case I. Temperature slightly elevated, otherwise no symptoms.

March 7th.—Rash still very well marked over involved surfaces. Branny desquamation beginning on cheeks.

March 9th.—Throat is normal, breast and back desquamating in branny scales; the surface beneath is purplish-red and somewhat rough. The eruption not developing fully on legs and forearms, hands or feet. The desquamation of the back is branny; on chest, large flakes, but nothing to compare with those in Case I.

March 15th.—Whole surface branny, redness disappearing. Palms and soles somewhat resemble Case I. before peeling, but characteristics much less marked.

March 19th.—General condition good. Skin about elbow flexures, inside, red. Hands and feet scaling in large flakes; palms and soles purplish-red.

March 26th.—Desquamation completed, except on soles of feet. Patient a little pale, otherwise well.

March 30th.—Well. Still a little hard skin adhering to heels.

In this case, the temperature ranged between $98\frac{2}{5}^{\circ}$ and 100°, never rising above the latter point. The details are shown in the temperature chart.

CASE III.—R. T., æt. six years, after a winter of quite fair health, was taken suddenly ill on the morning of March 20th, 1893, with sick stomach and one attack of vomiting. At 5:30 P. M., his pulse was 100 and his temperature was 99° in the mouth. An erythematous, somewhat maculated, reddish purple rash over neck, chest, and upper part of back. Tongue is clean, throat negative. No other symptoms.

March 21st.—Rash extending to whole of trunk; maculation more marked. Pulse 92; T. 98.5°. Tongue clean; throat normal. Considerable itching of skin. Face presents two circumscribed purplish-red flushes.

March 22nd. Rash extending to flexures of arms and knees. P. 88; T. 98.5°.

March 23rd.—Rash more extended in old positions, centering in places into large maculo papules, thrice the size of a pin's head. P. 88; T. 98.5°.

March 24th.—Desquamation in large flakes over chest, leaving a red surface, here usually uniform, but in places marked by raspberry-red maculo papules. P. 88; T. 98.5. Physical condition apparently perfect.

March 26th.—Desquamation continuing in large flakes. P. 88; T. 98.5°.

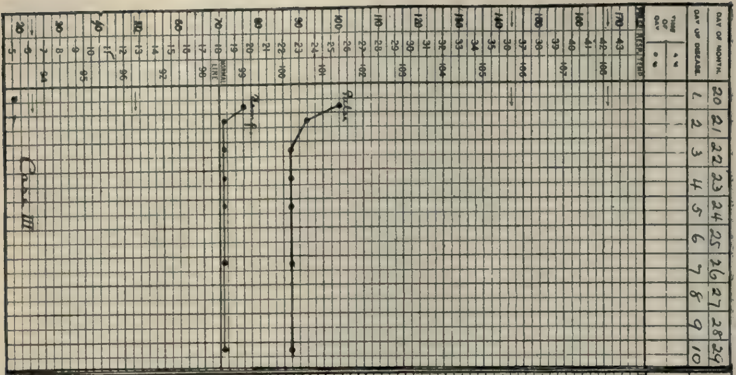
March 29th.—P. 88; T. 98.5°, but rash is still evident on back. Desquamation universal. Where it first began there is now secondary desquamation in branny scales. In the flexures of the joints the skin is peeling in large flakes, leaving a red surface, either uniform or mottled with large maculo-papules, raspberry red. This is especially shown in the axillæ and on elbows and knees.

April 25th.—Desquamation just completed. Perfectly well, as he has been since last note.

In this case, the desquamated flakes of skin were not so large as in the C. cases. During the course of the illness, the skin felt somewhat hot to the touch, though the thermometer showed no actual rise in temperature.

CASE IV.—Edward C., æt. five years, a patient at the Children's Hospital, was admitted for vesical calculus, and had a cutting operation a few days later. On March 22nd, 1893, shortly after the occurrence of Cases I and II in my private practice, he was transferred to the medical ward on account of the appearance of a scarlatinous eruption. In this case the rash was very similar to that in Cases I, II, and III, but there were in addition a red and slightly swollen throat, moderate fever, and a higher pulse rate. (See Chart.) The course was more prolonged, and at the end of the third week there was a slight puffiness of the face and feet, the elimination of urine was diminished, and this fluid presented the features to be observed in scarlatinal nephritis. The desquamation also occurred in large flakes the hands yielding a glove-like cast similar to that photographed from Case I, and the new skin exhibited the deep red color noted in the preceding cases.

CASE V.—Charlie T., æt. four and a half years, brother of Case III. Illness began on the evening of May 2nd, 1893, with vomiting and heat of head. A scarlatiniform rash appeared next day, at first indistinct and deep under the skin. Throat was normal; tongue characteristic. Palms and soles purple-red; face flushed purplish-red. No severe symptoms. Very moderate elevation of tem-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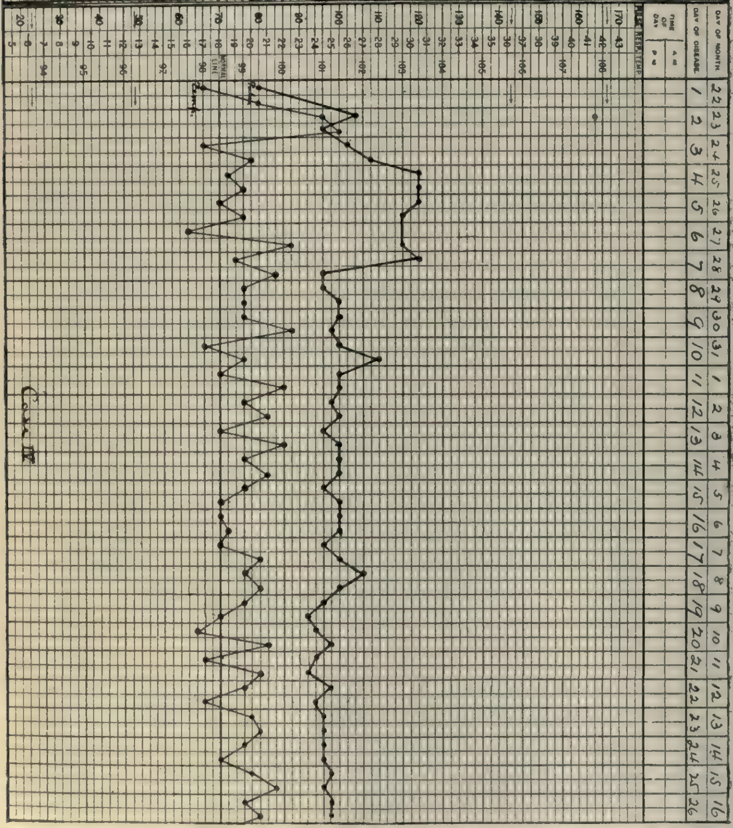
Case III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PULSE RESP. TEMP.
Pulse
Temp.
NORMAL LINE
Case IV

perature on first day, and increase of pulse rate for four days.

May 4th.—Rash all over body.

The subsequent course of this case was that of a mild, but perfectly distinct scarlatina. Desquamation began on the twelfth day. On the fourteenth day, the glands at the angle of the jaw on both sides were swollen, the left the greater, reaching the size of a walnut.

CASE VI.—Richard T., æt. three years, brother of Cases III and V, was taken ill on May 5th, 1893, three days after his brother Charlie. No sickness of stomach, but redness of fauces. The rash was typically scarlatinal, and the course uneventful, desquamation beginning on the 14th day. Moderate elevation of temperature and increased pulse rate up to sixth day.

The two cases of this series which stand by themselves are Cases I and II, brother and sister. Every probability, after excluding possible sources of two distinct infections, warrants the conclusion that both children were suffering from the same disease, no isolation between these two having been maintained, and the girl becoming affected with a very similar eruption seven days after her brother. Whatever can be accepted for one case must, therefore, be accepted for the other, and symptoms of the one must be weighed carefully with those of the other. Judging from the doubtful rash alone, the slow pulse, the practical absence or insignificance of fever, and the general well-being of these two children, rubella would have been a natural and convenient conclusion. Particularly as Hope, the second child affected, had besides a slight sore throat and slight enlargement of the cervical glands, though this enlargement was not at all marked, had to be sought for with great care, and was only found in the post cervical chains. The type of the subsequent desquamation, however, was distinctly scarlatinal, the empty vesicles in the peeling skin being quite marked in portions of the skin in Case I, and the skin in many portions coming off in large sheets.

Clement Dukes, in a paper read before the Medical Officers of School's Association, in February, 1894, states in regard to rubella, that the desquamation is always in small scales, rather than in flakes or sheets, and this is in accord with my own experience.

The infiltration of the skin noted in both cases, is also a feature of scarlatina which is wanting in the rubellous rash. The short period of incubation for the second case also militates strongly against rubella.

From the relapsing scarlatiniform erythema of Fereol, diagnosis was even more difficult. Desquamation, however, in both my cases, did not begin till the sixth day, while in erythema it occurs earlier, on the third or fourth day; and infiltration of the skin does not occur in erythema. Again, the occurrence of a second case of similar eruptive disease seven days after the first, in children in previous perfect health, points strongly to the presence and communication of an infection of short incubation, rather than to the operation of some possible common cause capable of producing a secondary erythema.

Measles, while scarcely to be thought of in this connection, can be excluded by the fact that both children had passed through an attack under my care, a year previously.

A point of some interest in this connection is the fact that the father of these children has never taken scarlatina, though directly exposed on several occasions in youth; and the mother had the disease in the lightest possible form when her brothers and sisters were seriously affected. Much stronger grounds, however, for deciding on scarlatina, were finally given by the other two cases observed shortly after these. About the time that Case I and II were recovering, Case III, Robert, the oldest boy of the T. family, was taken ill suddenly with vomiting, but with scarcely any elevation of temperature (99° in the mouth), a pulse of only 100, and no throat symptoms. The rash was so like that of Cases I and II that the course of the disease was watched with great interest. The history already given, and the temperature and pulse chart show how close was the similarity to Case I. Two days after his first seizure, a fourth case occurred at the Children's Hospital; the rash presented the same characteristics as the preceding cases, but the temperature and pulse were higher, there was sore throat, and finally a mild attack of nephritis during the convalescence. Meanwhile, in the T. household, a servant who had come in contact with the isolated boy developed a distinct case of scarlatina and was sent away, while, a few weeks later, the two remaining children came down with scarlatina, of mild degree and practically febrile course, but presenting no difficulty in diagnosis. In this instance, the mother had frequently left the sick room of the eldest child and had mingled with the younger children.

The rash in the first four cases possessed many points of resemblance. In Case I, the early eruption about the loins was punctate when first observed, and this was also noticeable in Case III over the neck, chest, and back. The reddish-purple tint in some regions was observed in the first three cases, most distinctly in Case II, where the first regions affected were tinted a purplish-red, as also the palms and soles; the palms and soles of Case I were thus marked, and Case III also showed the tinting, which was here rather reddish-purple, over the neck, chest and back. Case V, which was undoubtedly scarlatina, also showed the purplish-red color on the palms and soles, and on the cheeks. The desquamation in all four cases was such as I have never seen but in scarlatina. In I and II, there were veritable sheets of dead epidermis thrown off. The new skin, as shown most truthfully in water-color sketches, kindly made for me by Dr. J. Madison Taylor, from Case I, was remarkably red, even purplish-red in places in all four cases. The purplish tint was marked in Case II, which had shown this coloring most decidedly in the early eruption. The occurrence of darker macules or maculo-papules is also noteworthy. In Cases II and III these were quite distinct on some parts of the chest and back, during the eruption, while in Cases I and III, especially the latter, they formed a marked contrast with the red, new skin surrounding them.

An examination of the literature has offered little light upon these cases. Eustace Smith, however, states that in scarlatina the rash may be dusky and purple, and that sometimes dark red papules may be observed.

In regard to the pulse-rate, it seems the general consensus of opinion that even when the temperature shows no appreciable elevation, the acceleration of pulse is noticeable. In Cases I and II, the pulse never exceeded 88, and in Case III rose only on the first day to 100. This is difficult to explain, as is also the low temperature, especially in the presence of so marked an involvement of the skin as all these cases exhibited.

1922 SPRUCE STREET.

A Good Medical Journal—The question, what constitutes a good medical journal? would elicit a great variety of answers, and each answer would illustrate very fairly the aims and mental calibre of the doctor making it. A good journal cannot be other than helpful. If it is helpful, it will certainly be interesting; we do not mean amusing. There is a vast difference between the journal that is amusing and the one that is interesting. Men and women do not study medicine as a rule for amusement. Far less do they practice it for that purpose. The man who selects a diet of sweets soon gets dyspepsia. If he shuns solid and nutritious food, and takes a diet of scraps and ends, infant foods and gruel, he will fall into a state of malnutrition. If a doctor reads only a journal composed of scraps and fragments, prescriptions and therapeutic "hints," he will get a mental dyspepsia which he will find it difficult to cure. If he reads flippant journals, which make a specialty of anecdotes, stories, alleged medical poems, and about everything except scientific medicine, he will get mental and professional anæmia, which will become in time pernicious and beyond cure. The constant reading of light and trashy literature begets an inability to read serious and sound literature. This is especially true in medicine. The doctor, who reads nothing but abstracts, prescriptions, and amusing items, loses the taste and in time the ability to read serious scientific articles.—*Gaillard's Medical Journal.*

THE LOCAL TREATMENT OF THE SKIN BY ICHTHYOL OINTMENT IN SOME OF THE ERUPTIVE FEVERS OF CHILDREN.*

BY A. SEIBERT, M.D.,

New York.

In the winter of 1893–94, I had an opportunity to treat a case of malignant erythema nine weeks, which was accompanied by a quotidian and tertian type of fever, showing temperatures ranging between 98.5° F. and 105° F. No enlargement of the spleen was found and also no plasmodia in the blood. The erythema showed marked infiltrations of the skin, varying in size, but in the average about one-eighth of an inch in diameter, coming and disappearing within twenty-four to forty-eight hours. The color of the spots was a dark red, changing into bluish-purple before disappearing.

Large doses of chinin and of salicylic soda, as well as the hypodermic injections of a two per cent. carbolic acid solution (suggested by Dr. Janeway in consultation), had no effect upon the fever and the erythema. At the end of the eighth week of the illness, when my own patience as well as that of the sufferer were nearly exhausted, I came to the conclusion, that the high temperatures were due to absorption of pathogenic material from the erythematous infiltrations in the skin, and, as the internal treatment of the case had failed completely, that it was both rational and justifiable to attempt to reach the bacteria causing the trouble by germicidal treatment of the skin, where they were causing inflammatory conditions of the capillaries.

A somewhat extended experience in cases of erysipelas, beyond the stage of surgical interference (by drawing a bloody line according to Riedel-Kraske-Lauenstein) had taught me the value of enunctions with ichthyol-lanolin ointment. As the bacterium causing this attack of malignant erythema was not known, it was barely possible that the same might be acted upon by the ichthyol. A five per cent. ointment of ichthyol was therefore rubbed well into the entire skin of the patient, from the toes to the scalp, two ounces being used daily. After the first enunction but one more short rise of the temperature to 103.5° F. occurred, and from that day on the rise gradually decreased in extent, so as to leave the patient free of fever and of the erythema at the end of the following week, seven days after the first enunction. [The only cases of malignant erythema I have seen reported, are described in *Polotebnoff's* monograph "Zur Lehre von den Erythemen," *Monatshefte für praktische Dermatologie*, 1889.]

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* Read before the American Pediatric Society, Virginia Hot Springs, May 27th, 1895.

This experience in an adult induced me to use ichthyol ointment in the following eruptive fevers of children:

(1) *Erythema nodosum.* In this affection a liberal enunction of a five per cent. ichthyol ointment into and around the infiltrations of the skin made twice daily, has practically terminated every case I have since treated (ten in all) within forty-eight hours. The fever and the pain subside within a few hours after the first enunction.

(2) *Peliosis rheumatica.* Here also this method has been of decided benefit to my patients. The change for the better within twenty-four hours was marked by the decline of the temperature and the intensity of the redness of the affected parts. So far five cases were treated.

(3) *Scarlatina.* The most valuable service though this ointment has rendered me, I have found in cases of scarlatina. In the fall of last year I treated a boy, two-and-one-half years of age, during a severe attack, which gave rise to intense inflammation of the cutis, the temperature running between 104° and 105.6° F., and marked restlessness and insomnia for four days. As the throat was but slightly involved by necrosis, as the lymphnodes were but little swollen and no albumen was found in the urine, I took it for granted that the restlessness and the high temperature were due to the intense inflammation,

of the skin. At noon of the third day of the eruption an ounce of a five per cent. ichthyol-lanolin ointment was rubbed into the cutaneous surface of the entire trunk, while the temperature was at 104.5° F. One hour after the enunction had been made the child became rested, the fever subsided, and two hours later the child slept quietly, with a rectal temperature of 100.2° F.

Another enunction applied over the whole body the next day had the same beneficial effect, and the child made a speedy recovery.

It has been my misfortune to see but few cases of scarlatinal dermatitis during the last nine months, in all, but eleven, but in every one I have noticed the marked effect of these enunctions upon the local condition of the skin, the rapid decline of the fever and the general condition of the child. Drs. Baron and Bartels, of my staff at the New York Polyclinic, have had occasion to try this method in a number of cases of scarlatina, and their experience coincides fully with my own, so that in all we have seen the above effect in eighteen cases.

The change for the better in the patient is very striking. The swollen, red skin shrinks and turns pale brown; the temperature declines from three to four degrees within two hours, and the nervous, itching, peevish child becomes quiet, better humored, and usually goes to sleep without coaxing.

In parenthysis I will here state that I have also used this ichthyol treatment in a few cases of measles with good results, regarding the itching and restlessness of the children. I do not believe that this treatment has any specific effect upon the character of the general infection in scarlatina, so as to change a malignant case into a mild one, as Curgeven claimed for the enunction of the oil of eucalyptus in 1890 (*Medical Magazine*, 1892, Vol. I., pp. 729 and 1150), but I am convinced that the ichthyol ointment applied in these cases destroys most of the bacteria causing scarlatinous dermatitis, and thereby materially aids the patient in overcoming the general infection.

Unna has established the fact, that ichthyol-ointment causes the capillaries of the skin to contract, especially when they are abnormally dilated, and Abel, in a series of experiments, in the Hygienic Institute at Greifswald, in 1893, has found that certain bacteria (like pyogenic streptococci and the streptococci of erysipelas) are very susceptible to the contact with even weak solutions of ichthyol, while again other germs (like the staphylococcus aureus and albus, the bacillus pyocyaneus, the bacilli of typhoid, ozæna, and anthrax, and the spirillum of Asiatic cholera) resist the action of this remedy to a more or less marked degree.

In scarlatinous dermatitis we have abnormally dilated capillaries of the skin, and so far but streptococci have been found. Ichthyol acts on both, according to Unna and Abel, and therefore it deserves an extended trial.

114 EAST FIFTY-SEVENTH STREET.

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Over-Feeding of Infants—The great principle at the bottom of all successful feeding, viz.: that an infant is nourished in proportion to his power of digesting the food with which he is supplied, and not in proportion to the quantity of nutritious material he may be induced to swallow, is so obviously true that an apology might almost seem to be required for stating so self-evident a fact; but experience shows that this simple truth is one which, in practice, is constantly lost sight of. That that infant thrives best who is most largely fed, is an article of faith so firmly settled in the minds of most persons, that it is very difficult indeed to persuade them to the contrary. To them, wasting in an infant suggests the need of a large supply of food; every cry means hunger, and must be quieted by additional food.—*Eustace Smith.*

Infant Mortality—Aside from the ills which infant flesh is naturally heir to, much of the awful mortality is due to artificial conditions, which could be eliminated simply by the exercise of common sense. These conditions must be regarded as predisposing causes, and the most common as well as the potent are irrational care, improper feeding, and that irrepressible pestilence that stalketh at all hours—the purveyor of free medical advice.—*Med. and Surg. Reporter.*

DISCUSSION ON SCARLATINA.

Dr. J. P. Crozer Griffith: Dr. Blackader's paper has covered nearly everything which I would have said, and there is but little for me to add. Attention has not yet been called to the fact, that there is such a thing as a tonsillitis attended by an erythema. Such a combination is especially difficult to distinguish from scarlet fever, since it exhibits the same combination of sore throat, rash, and fever. In a day or two, however, the erythema disappears and the difficulty in diagnosis is removed. I well remember a case of this nature, which I saw in the hospital of the University of Pennsylvania some years ago, and which was the source of much anxiety for the first twenty-four hours. The occurrence of erythema with tonsillitis is, in my experience, uncommon, and I can find little reference to it in text-books; yet it is a combination which we would naturally expect, when we remember that both tonsillitis and erythema are often rheumatic manifestations. I have known of cases of wide-spread erythema, which greatly simulated scarlet fever at first, but which was later accompanied both by joint involvement and endocarditis, thus proving the rheumatic nature of the cutaneous eruption.

The question of the so-called "surgical scarlet fever" is an interesting one. Some writers maintain that it is merely scarlet fever occurring in a surgical case. The balance of opinion, however, is that with which my own accords, *i. e.* that it is a septic erythema. Cases of this nature are doubtless common in the experience of all of us. They are capable of giving rise to great anxiety at first, particularly where an apparently scarlatinal eruption appears in a hospital ward.

I remember one case of wide-spread erythema, not of septic origin as far as discoverable, in which a child was covered by a blush so vivid and so little puncture, that it resembled erysipelas rather than scarlatina. By the next day the eruption had disappeared totally. The distinction is sometimes drawn that the rash of scarlet fever is followed by desquamation of a peculiar sort—a peeling of the skin—whereas erythemata are not. This is certainly true in the majority of cases and is a very valuable guide. Even when an erythema does produce desquamation, it is rather in fine scales than in large flakes. There are, however, very pronounced exceptions to this rule, and we can all recall the condition going by various names, instances of which have been reported by various writers. There were, for instance, some very interesting cases reported, with plates, by Blanc, a few years ago, in which the skin was shed from the hands almost in the form of perfect gloves. It has never been my fortune to see a case as perfect as this, but I certainly have seen a desquamation following septic erythema, which was entirely similar to that of scarlet fever.

It is not often that the rash of scarlet fever resembles that of measles in any degree. Sometimes, however, in malignant cases it may be very blotchy, and limited in extent, and strongly suggest the rubeolous eruption. I want, on the other hand especially, to emphasize the very close resemblance which the eruption of rubella often bears to that of scarlatina. In an article in the *Medical Record*, published a number of years ago, I called particular attention to the fact, that, although typical rubella had a typical eruption, there were two very distinct variations, which could be called *Rubella morbilliform* and *Rubella scarlatiniform*. These were not distinct diseases, as Filatow had suggested, but were varying forms. The first of these is so like measles, that it cannot be differentiated in sporadic cases; while the second can hardly, if at all, be distinguished from scarlet fever, so far as the rash itself is concerned. It is true, that careful examination of the eruption of rubella scarlatiniform will generally reveal the true nature. However uniformly red the rash may be over the greater part of the body, in the regions of the wrists and ankles, and the fingers and feet, we can usually find a distinct macular appearance upon a uniformly red base. Yet this is not always the case, and sometimes, too, the rash of scarlatina shades off at the extremities, and tends to be a little uneven and blotchy there, so that this diagnostic test is by no means infallible. I freely confess, that I have more than once mistaken one of these two diseases for the other; and, indeed, I do not believe, that it is possible, in some cases, to distinguish them early in the attack.

The enlargement of the superficial cervical glands, which has often been quoted as a diagnostic sign of rubella, is by no means so. A few years ago, I looked into the matter carefully, and found that these glands were quite commonly enlarged in measles also, and then published my results. Still further study showed, that these glands are not at all rarely enlarged in children, who are apparently healthy, and quite frequently so in those whose health is below par. It is only another instance of the fact that we often fail to find a symptom, because we do not look for it. We all search for the enlarged glands in rubella, and fail to search for them in rubeola; and therefore overlook them. This same glandular enlargement may be present in scarlatina. I do not, of course, mean to say, that there is not a very special disposition to the enlargements of these glands in rubella.

To sum up, it is a matter of fact, that there is no one symptom upon which the diagnosis of scarlatina can be infallibly based. Certainly not upon the rash, for this may be simulated by various erythemata as well as by rubella; not the peculiar desquamation, for this, too, is not perfectly reliable; not the fever, nor the pulse. It is only upon the complex of symptoms that we can rely. These will usually guide us aright, but not invariably so.

Dr. Augustus Caille: A practical question is, Can we differentiate between contagious and non-contagious skin diseases? In our hospital, it is the chief duty of one person to keep out contagious diseases, and I have endeavored to educate myself up to that point. While in the majority of cases I would be able to tell, occasionally one appears in which I am unable to decide. As regards the communication of Dr. Seibert, I would say, that I have once used ichthyol in pemphigus and found it irritating. In eruptions, where there is no open surface, it would probably be good.

Dr. Henry D. Chapin: A rash sometimes accompanies tonsillitis that resembles that of scarlatina. That rash disappears about the second day, and there is no desquamation. In many cases we cannot tell whether the child has a mild form of scarlatina or not. I was recently called to see a little girl with a rash upon her back and chest. The tonsils were slightly enlarged. As the child had poor digestive powers, I believed the rash to be due to that cause. In about a week, her brother had a marked attack of scarlet fever, and I had to admit that I had made a wrong diagnosis in the first case. The point made by Dr. Jennings in reference to the pulse I have not observed, but if it is of the value he says, it would certainly be helpful in the diagnosis.

Dr. J. C. Wilson: There are two points, which have not been spoken of, that have seemed to me important in the diagnosis of scarlet fever. The first is, that occasionally in young subjects in the first week of enteric fever, an erythematous condition of the skin is encountered, which can scarcely be differentiated from scarlet fever. The erythema and absence of fever leads to extreme difficulty in diagnosis. In two or three days, usually, the rash disappears, and about this time the enlargement of the spleen makes the diagnosis clear. The other point is the large number of cases of scarlet fever, attended by large patches of rash corresponding to descriptions of the rash of scarlatiniform rubeola. This is especially common in adults.

Dr. John Dorning: We are all forced to the conclusion, that there are some cases in which a diagnosis is very difficult. It has been stated in some text-books, that enlarged post cervical glands are pathognomonic of rubella. How do we know that the glands were not enlarged before the attack? Why should they occur in rubella more than in scarlet fever?

Dr. A. Jacobi: The condition of the throat certainly proves nothing, for we have a similar throat in many diseases. Dr. Blackader has said that intestinal erythema is never attended with fever, and that the absence of fever is pathognomonic to a certain extent. I remember a case in which a child had been having fevers for several months, several times accompanied by an eruption. When I was called to see it, there were temperatures of from 102° to 103°F., and a general erythema. I found both to be undoubtedly the result of intestinal intoxication. So the absence of fever in such cases is not a positive guide. As far as desquamation goes, a number of years ago, a physician of New York, well informed and a good observer, speaking of the repetition of scarlet fever, said he had seen it in one and the same person, at that time an adolescent girl, twenty-three times, the whole body desquamating each time. I am certain, that every one of the attacks was of neurotic origin. The peeling of large patches then is not conclusive either.

Dr. S. S. Adams: I agree with those who have said, that we have no symptom or group of symptoms upon which we can rely for positive diagnosis. In the doubtful cases the question of quarantine becomes an important one. I am an advocate of quarantine, and think it much wiser to do this in doubtful cases than to subject other members of the family to the possibility of contagion.

Dr. J. H. Fruitnight: Recently I was called to a boy, said to be ill with scarlet fever. He was covered with an eruption, had a temperature of 101°, was wildly delirious and complained of burning in the throat. The throat was found to be very red and the pupils were dilated. I advised his mother that it was not scarlet fever, but more likely belladonna poisoning. He was given sedatives, and on the following morning confessed to having eaten some leaves which I found to be stramonium. In reference to such cases as Dr. Jennings spoke of, I remember a young lady who had five attacks within five years, always occurring in the spring. She said to me: "I have not scarlet fever, although desquamation occurs with every attack, and the first three times the doctors called it scarlet fever." It certainly had the appearance of that disease, but I think it was a neurotic condition of the skin. Germane to Dr. Wilson's paper I would report a case that occurred to me: A child had scarlet fever, which was followed by extensive sloughing on the right side of the neck, and the carotid artery was exposed to view. Rupture of the artery caused death.

Dr. A. A. Macdonald: With regard to the belladonna rash, some weeks ago, in the Infants' Home at Toronto, atropine was given to some of the children for whooping cough, from which many of them were suffering. A characteristic scarlatinal rash appeared in many cases, with elevation of temperature and rapid pulse. In the poisoning of belladonna we have not the rapid pulse of one showing great depression. I think it is best to quarantine doubtful cases simply as a protective measure.

Dr. George N. Acker: I have a patient, who since childhood has been subject to frequent attacks of pain, rapid pulse, and intense redness of the skin, followed by desquamation of the whole body. The attacks were diagnosed as scarlet fever by many physicians. Others concluded that they were due to intestinal trouble, and calomel was administered. He had no attack for some years, but later, neglecting to take the calomel, the attacks returned. He has had but two attacks since 1876.

Dr. Louis Starr: I wish only to add my testimony as to the enlargement of the cervical glands. I have found them enlarged in many other conditions than rubella. I have seen within the past two weeks cases of measles with enlarged glands all over the body.

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The Medical Care of Children—In his presidential address at the opening meeting of the Dublin University Biological Association, Mr. Henry C. Drury spoke of the importance of this subject, as manifested by the great infant mortality in large towns and cities. Taking for comparison the general mortality of the population at the high figure of 25 per 1,000, the mortality among infants in the first year of life reaches the fearful figure of 200 in every 1,000 born (Henoch). No doubt much of this is quite inevitable, but no doubt, also, an enormous proportion is due to preventable causes. Two principal factors influence this great death-roll: one, the natural development of the child's body, tending to evoke pathological changes in the nervous system, glands, skeleton, etc.; the other, the condition of the child's surroundings —want of care, foul air, bad feeding, cold, hunger, inherited diseases, illegitimacy. The author believes, however, that much of this mortality is preventable by judicious medical treatment, and by the better education of mothers and daughters.—*Western Medical Reporter.*

Hospitals for Diphtheria—We have provided hospitals for the sick with nearly every other disease, and receive the patient without question, but when a case of diphtheria presents itself the doors are closed, and if, perchance, there still remains any charity for this class of sufferers, the accommodations are such as not to be designated as hospital or hospitable. Because one is unfortunate enough to contract a disease, does it follow that it is not the proper thing to have diphtheria or small-pox, while it is highly so to suffer from erysipelas or pneumonia, or from our time-honored associate and highly-respected protégé, tuberculosis. I am glad to say, that the question of providing facilities for the care and treatment of this class of maladies is interesting many. But here and there, over our broad land, we observe scenes transacted, which are, in this enlightened age, barbaric and a blot on our civilization.—*Kinyoun.*

A CASE OF SYMMETRICAL GANGRENE OF THE FACE AND SACRAL REGION FOLLOWING SCARLET FEVER.*

BY J. C. WILSON, M.D.,

Philadelphia.

I saw, in consultation with a medical friend, October 22. 1893, in a small town in New Jersey, a case of rapidly developing gangrene of the face and sacral region occurring after scarlet fever. This sequel of scarlet fever must be extremely rare ; for this reason I desire to place it upon record. The notes are, unfortunately, owing to the circumstances in which the case was seen, incomplete.

The patient was a lad six years of age, who was seized with scarlet fever, during the prevalence of a local epidemic, upon September 28th. The case was described as quite severe, the form being scarlatina anginosa. The patient, however, did well, and was permitted to get out of bed about the tenth day, namely, October 7th. From this time, for a period of ten days the child seemed well, had a good appetite, normal secretions, and the urine is stated to have been free from albumen. There was abundant desquamation.

Upon October 17th the superficial cervical lymphatics began to swell. They were much enlarged upon the following day. Upon the 19th there were severe pains in the legs and ankles, with an abrupt decrease in the quantity of urine voided. Upon the 20th there was almost complete suppression of urine, with great pain along the urethra, intensified upon every attempt at micturition. Dropsy of the face and of the feet was absent. The temperature ranged between 101°–102° F. Upon the 21st the urine was slightly increased in quantity and there was less pain in voiding it. It was smoky in color and highly albuminous. To the question "What was the amount of urine passed at a time during the last attack, and what were the intervals between the passing of urine?" the physician in attendance subsequently wrote as follows: "October 20th the quantity was very small, not more than a drachm, until evening, when about two ounces were voided at once. October 21st, in the morning, about two ounces, and about the same quantity in the middle of the day; a smaller quantity in the evening. October 22d, four ounces in the morning. The last voided."

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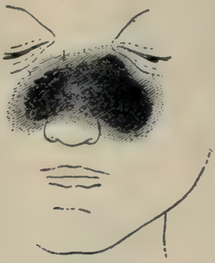
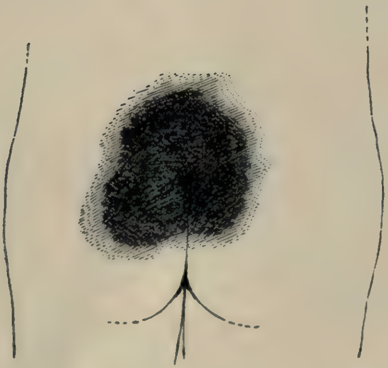
*Read before the American Pediatric Society, Virginia Hot Springs, May 28, 1895.

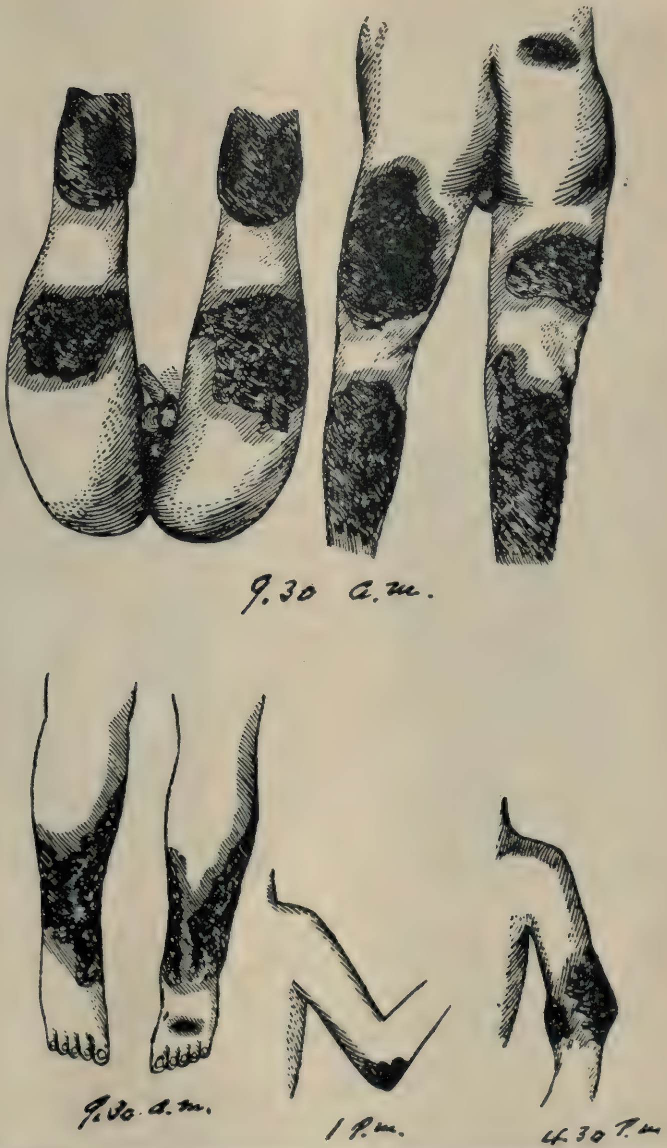
On the morning of the 22d of October, the child complained bitterly of pain in the sacral region and buttocks. Upon examination at 7.30 A. M. the skin was found to be of a deep purplish color, almost black, over an area in the sacral region about two inches in diameter. Around the discolored portion there was a narrow, pink, inflammatory border. About noon upon the same day nose-bleeding appeared, at first profuse, afterwards slight, and continuing until death. Shortly after epistaxis began, discoloration of the nose showed itself. There was at first lividity, attended with great pain. In the course of an hour the greater part of the nose had become bluish-black, the area of discoloration being surrounded by a narrow inflammatory zone. These changes rapidly extended and invaded the cheeks. I saw the patient about 6 P. M. the same day. His condition was as follows: Temperature 102.5° F., pulse feeble, rapid, counted with difficulty; about 180. The position was that of right lateral decubitus; legs and thighs strongly flexed. Mind perfectly clear, though small doses of morphia had been administered. Nourishment was refused. There was complaint of thirst, which was relieved by occasional sips of dilute brandy and water; nausea, but no vomiting. Tongue was dry, smooth and bright red. The patient complained of pain in the face, the lower part of the back and legs and ankles, and expressed great distress on the slightest efforts at movement. Auscultation of the heart yielded unsatisfactory results. Percussion resonance over the chest was clear. The face and eyelids were slightly œdematous. An irregularly symmetrical area of bluish-black discoloration of the skin occupied the nose nearly to its tip, and spread for an inch to the right and an inch and a half to the left side of the face. An area of similar discoloration, larger in size, also irregularly symmetrical, about three by five inches in diameter, occupied the sacral region, extending down toward the buttocks. This area was likewise surrounded by a narrow inflammatory zone beyond which the skin was slightly œdematous. There were no other gangrenous spots. The skin over the discolored portions was dry and lustreless, presenting the appearance seen in rapidly forming dry gangrene. At the borders, however, there were here and there minute blebs without oozing. I learned by letter that the patient died at half-past six o'clock on the following morning, the swelling and discoloration of the face continuing meanwhile to increase, involving the eyelids, the alae of the nose, and the upper lip. The patient's mind remained clear until about an hour before death. No post-mortem examination was made.





The patient was an only child, without history of previous disease, His parents were in good health. There was no hereditary tendency to anæmia or hemorrhage.

Davies (*British Medical Journal*, Feb. 28, 1891) reports a similar case. It is of sufficient interest in this connection to be quoted in detail: F. S., aged nine years, at the end of the third week of an attack of scarlatina, while freely desquamating, awoke on the morning of November 10, 1890, apparently well. At 9.30 he complained of violent pain in his lower limbs, which were found to be cold, puffy and very tender to the touch. Spots then first appeared on the shins, both calves and the dorsum of the left foot. The maternal grandfather of this child died of hemorrhagic small-pox. Members of the mother's family "bled easily." Two years previously F. S. suffered from "general debility." He had suffered four years before from measles chicken-pox, and had nose-bleeding on slight provocation. At the time of the attack of scarlet fever his general health was good. The scarlet fever had been severe, rash well developed, lasting six days, followed by prompt desquamation. Four hours after the attack of pain Dr. Davies saw the child. He was then anæmic; desquamating freely; mental condition good; temperature, bowels and urine normal; pulse, 100; irritable. Feet and legs to the knee were slightly œdematous; the surface was warm. There were patches of ecchymosis about both ankles. Both calves were covered by bluish-black subcutaneous hemorrhagic patches surrounded by narrow zones of inflammation; were very tender to the touch. The following day, November 11th, at 9.30 A. M., the temperature was normal, skin moist and very pale; the urine scanty, but normal; pulse 120; the extremities warm. The discolored patches were now merged into extensive raven-blue areas surrounded by inflammatory zones. The symmetry of the patches was remarkable. The legs were slightly less œdematous, but exceedingly painful, and the child shrieked if they were moved or roughly handled. New ecchymodic patches appeared upon the legs and on the right hip, their development being preceded by great local pain. There was no enlargement of the joints. At 1 P. M. the patches ceased to increase, except those on



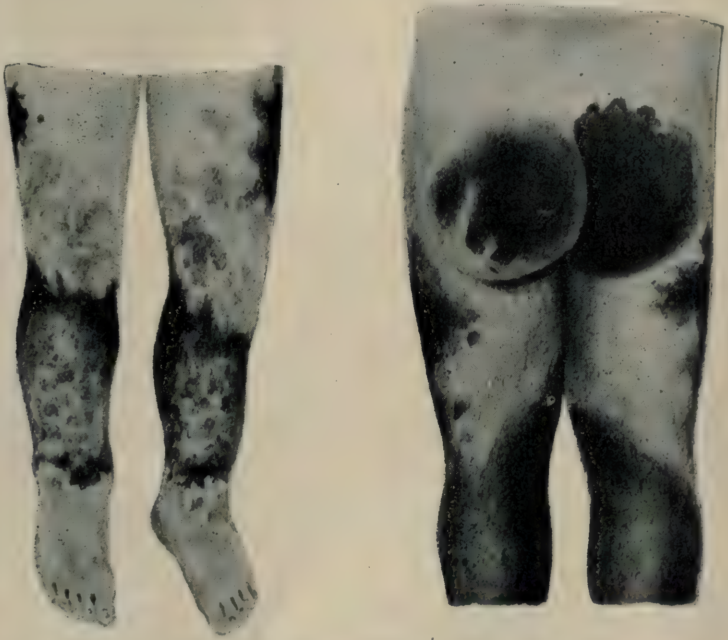
DR. DAVIES' CASE OF SYMMETRICAL GANGRENE. (*British Medical Journal.*)

the right hip and the dorsum of the left foot, which were spreading rapidly. The bruise-like ecchymosis had appeared at the tip of the left elbow, which was very painful. There was no swelling of the left elbow-joint, though movement was attended with great pain. The patient's mental condition was clear; there was no fever. At 4.30 P. M. the patches were spreading rapidly, there was considerable swelling of the left elbow-joint, with marked discoloration. The slightest movement of the joint caused intense pain, There was at this time slight fever and the pulse was 140. The patient was removed to the Homerton Fever Hospital, the patches continuing to spread and new centres forming in other parts, together with swelling of one ear. The patient died on November 12th, about noon.

The result of the autopsy, which was conducted by Alexander Collie 48 hours after death, was as follows: Some blood-stained fluid in each pleural cavity, rather more on the right side; lungs anæmic, otherwise normal; heart contained no clots—its walls thin and flabby; liver and kidneys anæmic; spleen not enlarged; intestines anæmic, walls very thin, containing a little fecal matter; bladder contained only a few drops of urine; no fluid in peritoneal cavity; no extravasation of blood in any internal organ and no abnormality except anæmia. Tonsils congested in patches. Upon removal of brain, arachnoid milky; convolutions somewhat flattened; small quantity of serum in ventricles. Nothing further detected.

Dr. Reginald Southey, Transactions of the Pathological Society of London. Vol. xxxiv., Dec. 5, 1882, reports a case of rapidly developing symmetrical gangrene in a child two years and nine months old:

S. C., the only child of young parents, was brought to St. Bartholomew's Hospital December 3, 1882, at noon. The patches of black, purple lividity, symmetrically situated upon both buttocks and both legs. Her face and the rest of her skin presented an ashen pallor. The child was pefectly conscious, but suffered no pain except from movements of her limbs. Axillary temperature 99.4° F.; pulse 120, small and wiry; heart sounds clear, regular; impulse feeble; respiratory movements and auscultatory signs over the lungs normal. The urine was albuminous, without casts or blood. After a hot bath convulsions developed, which persisted, with slight interruptions, until death, which occurred 32 hours after the appearance of the first patch of discoloration on the calves of the legs. Upon post-mortem examination the blood in the heart and elsewhere was dark in color and fluid; no coagula, thromboses or embolism were discovered; no visceral lesions were found. The spleen was slightly enlarged, dark colored and soft. The gangrenous areas showed upon section that the skin and connective tissue were chiefly, it not solely, the seat of stasis and extravasation. The muscles were blood-stained about their sheaths, but not in their substance. Blood-coloring matter and corpuscles, together with blood serum, poured out into the affected parts, which presented the



DR. SOUTHEY'S CASE OF SYMMETRICAL GANGRENE.

appearance of a great bruise. There was no effusion into any joint.

The father of this child was thought to have been a subject of congenital syphilis. He had suffered from vomiting of blood about the time that the subject of the present history was about six months old. S. C. had been apparently in good health until the October preceding her death. At that time she had an attack of febrile purpura, attended with pain in the head, legs and feet, and the appearance of crimson spots upon the ankles and calves. She was kept in bed for a few days, during which she was feverish and fretful, and vomited. The middle of November she again suddenly became feverish, lost appetite, was languid and drowsy, and slept continuously for the better part of three days. She then rapidly improved and remained in good health until the sickness of which she died. This illness began abruptly, two days before the child came under observation, with headache. The following day she complained of pain in her legs, and the father observed a slight colored patch on each calf surrounded by a red margin. These patches rapidly extended and became darker in color. Vomiting developed. About 3 A. M. December 3d, symmetrically livid and purple patches appeared on the posterior aspect of each arm two inches above the elbows, and at 6 A.M. the parents first observed two similar but larger and blacker spots on the buttocks. The mother stated that the child's bowels were generally freely opened and had acted that morning naturally. She had also passed a little red, thick, cloudy urine. The presence of blood in the urine or bowels had not been observed upon that day or at any previous time.

Rapidly developing local gangrene as a sequel of the acute febrile infectious diseases has been frequently noted; more frequently by Continental than by English or American observers. Gangrene of a member, usually the leg or foot, as a result of embolism or thrombosis, has also been observed, but it is still more rare. These gangrenous conditions occur chiefly after enteric fever, scarlet fever, cholera, and influenza. The distribution of the lesions, and their relation to vascular areas render their pathology intelligible. The arrest of blood supply by 1, an embolus; 2, a thrombus arising from disease of the intima; or, 3, in consequence of prolonged angiospastic states, may be followed by necrosis of the part, the destructive changes being intense and rapid in proportion to the nature and degree of antecedent blood or tissue-infection, and the impaired nutrition of the tissues from acute disease. My own case and those of Drs. Davies and Southey rest upon a different pathological basis. It is unfortunate that no studies of the blood were possible. In my case there were no evidences of hemophilia or other antecedent disorder of the blood or vessels. In the other two cases it may be assumed, although the data are not precise, that hereditary tendencies of this kind existed. The intervals elapsing between the beginning of the attack of scarlet fever, and the sudden onset of the gangrenous process in two of the cases is suggestive, being in each instance three weeks, while the interval between the attack of "febrile purpura" and the development of gangrene in Dr. Southey's case was less than three months. The acute symptoms in my case were enlargement of the superficial lymphatics of the neck, prolonged epistaxis and fever; and the marked constitutional symptoms in the other cases indicate a sudden profound change in the condition of the blood, probably a secondary infection. The drawings indicate that the superficial symmetrical gangrene was to some extent at least due to pressure, though this explanation does not hold good for the gangrenous patch upon the nose and cheeks in my case. Careful inquiry gave no ground for the suspicion that either in consequence of the bleeding of the nose, or for any other cause, there had been undue pressure upon the integument of the face.

1437 WALNUT STREET.

DISCUSSION.

Dr. A. Jacobi: I have never seen symmetrical gangrene. It struck me as strange that more cases were seen after measles than after any other disease.

Dr. Wm. Osler: Clinically there are three groups of these cases of spontaneous gangrene: First, the febrile or post-febrile, seen most frequently after scarlet fever, measles, and typhoid fever; purpura is not, so far as I know, a feature of this group. Second, cases of local gangrene in association with extensive purpura. Third, Reynaud's disease, in which the necrosis affects the extremities, most commonly the fingers or toes, but sometimes larger portions of the limbs.

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Occurrence of Diphtheria—It has been the practice of the Department during the last year to plat upon a city map the location and date of every case of diphtheria in which the diagnosis had been settled by bacteriological examination. After several months the map presented a very striking appearance. Wherever the densely crowded tenements were located, there the marks were very numerous, while in the districts occupied by private residences very few cases were indicated as having occurred. It was also apparent the cases were far less abundant, as a rule, where the tenements were in small groups than in the regions of the city where they covered large sections. At the end of six months there were square miles in which nearly every block occupied by tenement-houses contained marks indicating the occurrence of one or more cases of diphtheria; and in some blocks many cases (15 to 25) had occurred. As the platting went on from time to time the map showed the infection of a new area of the city, and often the subsequent appearance of a local epidemic. It was interesting to note two varieties of these local epidemics; in one, the subsequent cases evidently were from neighborhood infection, while in the second variety the infection was as evidently derived from schools, since a whole school district would suddenly become the seat of scattered cases. At times, in a certain area of the city, from which several schools drew their scholars, all the cases of diphtheria would occur (as investigation showed) in families whose children attended one school, the children of the other schools being for the time exempt.—*Report, N. Y. Board of Health.*

OSSIFIED CEPHALHÆMATOMA.*

BY FRANCIS HUBER, M.D.,

New York.

The common form of cephalhæmatoma, due to extravasation of blood under the periosteum, usually presents or is characterized by a firm ridge at its circumference. Ordinarily it shows itself within a few days, in some cases only after a week or two, and its presence is due to the bone-forming function preserved by the uplifted periosteum. If examined at this period for the first time, the firm outer rim contrasted with the elastic, yielding nature of the central portion of the swelling may lead to the impression that we are dealing with a depressed fracture or defect in the bone. An error in the diagnosis is possible if this point be forgotten. In fact, such a case came under my observation but a short time ago.

Sometimes, in cases which have lasted from four to six weeks, thin plates or bridges of bone form here and there in the most prominent portions of the fluctuating tumor, giving rise to the sensation of crepitation when palpated, or even simulating the parchment-paper crackling of cranio-tabes. In rare instances adventitious bone thus formed may persist and form a large bony crater at the vault of the skull.

In the general run of cases, after the lapse of a few weeks or a month, the fluid portions are gradually absorbed and a more or less complete bony ridge (the original circumference) remains. In time the ridge likewise disappears, resembling in this respect callus around a fractured long bone. Three to four months from the outset no trace of thickening can be appreciated.

Exceptionally the entire mass undergoes a process of ossification. Three such cases have come under my observation Two of these were seen in the service of

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* Read by title before the American Pediatric Society, Virginia Hot Springs, May 28, 1895.

Professor Jacobi at the Children's Clinic, College of Physicians and Surgeons; the third was a case in private practice.

Willie B., first child, born after a tedious labor of twenty-five hours. Upon the subsidence of the caput succedaneum, an elastic swelling was noticed over the right parietal bone. The mother was advised to have this opened by the attending physician, but wisely objected. The case first came under my observation when the child was five weeks old. It then presented the usual features of a subperiosteal cephalhæmatoma with a distinct bony ring at its circumference. Two weeks later, ossification had increased to such an extent that but a small fluctuating spot, not larger than the diameter of a five-cent piece remained at the most prominent portion of the swelling. In another week this, too, became firm and hard.

At the age of twelve weeks, I found a firm bony swelling at the posterior and upper parts of right parietal bone, the most prominent portion being over one-half inch above the normal level of the head. The mass appeared to be solid; firm pressure did not show any yielding or soft spot in the surface.

When six months old the tumor did not seem to have diminished any in size. Since writing the above,a fourth, but much more unusual case, came under my observation. An extremely rachitic child, two years old, instrumental delivery, presented two ossified tumors of this description upon either side of the frontal bone. Their characteristics were such, that they could not be confounded with the rachitic osteoid prominence so common in rachitis.

The production of bone in the peripheral portions of this class of tumors admits of ready explanation. The bones forming the vault of the skull, the parietal, frontal and a certain portion of the occipital are developed in membrane or fibrous tissue.

The membrane, afterwards forming the periosteum from which such bone as the parietal is developed, consists of two layers—an external fibrous and internal cellular or osteo-genetic. If a thin metal plate be placed beneath the periosteum of a growing bone it will soon be covered by osseous deposit, but if it be put between the fibrous and osteo-genetic layers it will never become enveloped in bone, for all the bone is formed beneath the latter. (Kirke's Physiology.) Thus, when the periosteum which forms the limiting membrane of the subperiosteal form of cephalhæmatoma is separated from the bone itself by extravasated blood, its power to produce bone is not destroyed. Ordinarily a hard ridge forms at the outer periphery of the mass. In rare instances a large bony crater is produced, and in other cases the walls may be more or less extensively ossified; finally the entire mass may be transformed into bone. Remge reports three interesting autopsies. In the first, the bony ridge was well developed at the eighth day. In the third case, though the infant died at the sixteenth day after birth, from other causes, a hard bony wall roofed in the circumference of the swelling.

A most remarkable case has been reported by Bland Sutton. A monkey in the "Zoo" had on its head a large rounded tumor, which was soft and fluctuating at the top, where a feeble pulsation was perceptible. That portion near the skull was extremely hard and felt like bone. At the autopsy the tumor was found to be an old cephalhæmatoma with extensive ossification of its walls; the crater-like arrangement of bone on the top of the skull was covered in by pericranium, and contained dark fluid blood. The frontal bone forming the floor of the cavity was so thin that it yielded to pressure of the finger like parchment. Some of the ossicles forming the walls of the cyst were bevelled at the edges and serrated, so as to articulate one with the other like Warman's bones. Fragments of these bones were examined microscopically and found to exhibit the structure of true bone.

CHLOROFORM ANÆSTHESIA IN CHILDREN.

BY JAMES CARMICHAEL, M.D., F.R.C.P.

Physician to the Edinburgh Royal Hospital for Sick Children, Clinical Lecturer on Diseases of Children in the University of Edinburgh.

I have perused with interest and with general approval Mr. Owen's short paper in the March number of the ARCHIVES OF PEDIATRICS on the administration of chloroform in children. During thirty years experience of practice, twenty of which have been in hospital, I am proud to say I have not had a death under chloroform.

In the medical wards of the hospital, chloroform is used frequently for various surgical operations, draining empyemata, and examining the abdomen in most abdominal cases.

I do not hesitate to affirm as the result of experience that chloroform is relatively safer in the child than in the adult. Children are more sensitive to its action than adults and consequently a smaller dose is required to produce narcosis. In children we may practically exclude from the risks attending administration, degenerative changes of the cardiovascular system, one of the great dangers in adults. The action of the anæsthetic on the nervous system of the child is so rapid as to constitute this fact an element of safety, combined of course with due caution in administration. If its action is quick the reaction is equally so, and herein I believe lies an element of safety.

Mr. Owen here touched on several points regarding administration including the administrator and the method. I am quite at one with him in regard to great caution necessary in giving the anæsthetic, and the need of experience on the part of the administrator. In our hospital and in all the Edinburgh hospitals, we have no chloroformist, the resident physician acting in this capacity. This entails responsibility on the part of the surgeon, who as far as possible keeps a watchful eye on the patient during administration. In theory this may not be considered either possible or desirable, but in practice it works well in Scotland.

It would be interesting to know, but difficult at present rom want of statistics to ascertain, the relative results in deaths between the rapid and the slow methods of anæsthetisation. We believe, and I do not think the English school deny it, that the mortality is not larger in Scotland than in England. I have had no experience of the slow method, but my friend Dr. Lauder Brunton who was brought up in the Edinburgh school, and matured his experience in London, still holds, I understand, that the rapid method is the safer.

I have given the whole subject a deal of thought and perhaps may be allowed to express my belief that in the slow method (*a*) the patient is longer under the influence of the anæsthetic and is therefore in greater danger; (*b*) by this method more time is allowed for saturation of the blood and therefore there is less likelihood of quick reaction afterwards; (*c*) the period of excitement, during which experience shows there is considerable risk, is much longer.

What we aim at, in what Mr. Owen dignifies by the name of the Edinburgh method, is to administer as little as possible of the anæsthetic comitant with producing rapid and complete narcosis, as evidenced by the abolition of reflexes and muscular excitability. We agree with Mr. Owen, Dr. Carter, and the English school generally that an overdose is the danger, but we hold that due caution in administration which includes previous preparation of the patient, and unremitting attention during administration, to (*a*) the respiration, (*b*) the circulation, (*c*) the nervous system, will insure safety in the great majority of cases during the exhibition of this valuable anæsthetic.

Clinical Memoranda.

A CASE OF EMPYEMA WITH PROLONGED HIGH TEMPERATURE AFTER OPERATION DUE TO MULTIPLE ABSCESSES OF THE LUNG.

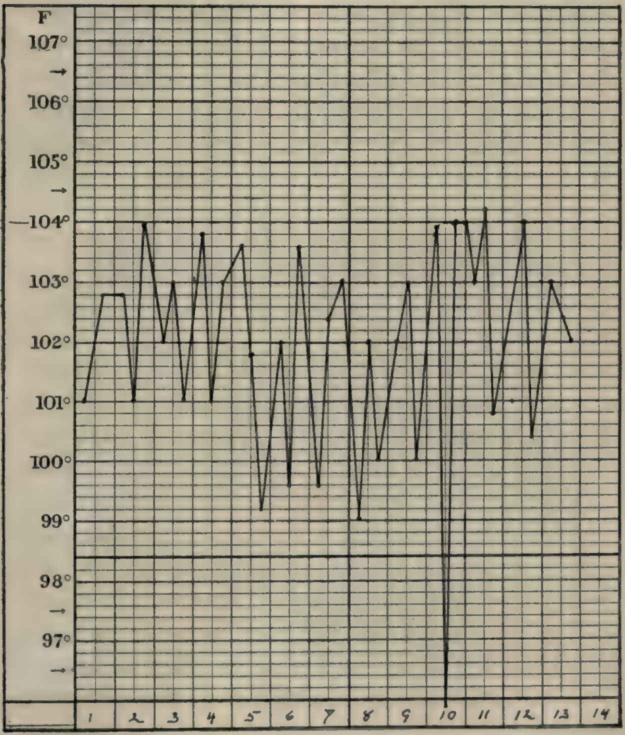
BY L. EMMETT HOLT, M.D.

Attending Physician to the Babies' and to the Nursery and Childs' Hospitals

D. L., a male, three years old, was admitted to the Babies Hospital, February 1, 1895. The family history was good; three other children healthy. The patient, a twin, had been well up to the beginning of the present illness twenty-three days before admission. The symptoms began with fever and cough, and he had been treated for pneumonia from the outset. For the past week or ten days his general condition had been so bad that nourishment could be given only by the rectum, and the patient was growing more and more unmanageable at home, he was sent to the hospital.

On examination, he was found to be extremely cachectic, emaciated, and gave every indication of being an extremely sick child. The tongue was heavily coated; there was sordes over the lips and teeth, and deep fissures at the angles of the mouth. The physical examination of the chest, showed diminished movement of the left side, flatness over the whole left chest, excepting at the apex in front, where the percussion note was tympanitic. A few friction sounds were heard over the left base in front; at the upper portion, friction sounds and very rude breathing. Below, the breathing was extremely feeble, almost absent. Posteriorly, there was very feeble breathing over the upper half of the left chest, with bronchial breathing below. The right lung was normal, except a few coarse râles. The position of the apex beat could not be made out by palpation, but by auscultation it was located in the median line. The spleen was one-and-a-half inches below the ribs; liver normal; pulse 150, and feeble; respirations 56. Very great bodily weakness, and a distinct muscular tremor at any voluntary effort.

Exploratory puncture, made in the eighth space over left lung behind, revealed a thick, creamy odorless pus, cultures from which showed only pneumococci. On the next day, an incision was made in the seventh space behind, at the angle of the scapula, without an anæsthetic, and about one pint of pus evacuated. A drainage tube was inserted an antiseptic dressing applied. No improvement in the child's condition followed the incision. The wound continued to discharge very freely for the next three or four days. Many masses of fibrin were dis-



charged, frequently blocking the tube so that it had to be removed at nearly every dressing for cleansing.

It was a matter of the greatest difficulty to give food and stimulants, and feeding by gavage through the nose, was finally resorted to, as the only method by which food in any adequate quantity could be given. The drainage tube was gradually shortened after the second dressing, until only about two and a half inches of it remained.

On the tenth day, on account of the development of a case of diphtheria in the wards, the child was given an immunizing dose of antitoxin. The temperature immediately fell from 103.8° to 95.5°. There was some slight symptoms of depression, but in a few hours the temperature rose again, and no unpleasant after effects were seen.

The discharge continued very abundant throughout the entire stay in the hospital. The patient gradually lost ground, and died on February 13, at the end of the seventh week of his illness.

Throughout this case, the point of extreme interest was the unusual temperature, which continued after the incision. Frequent and repeated examinations were made of the chest, without disclosing any sufficient explanation. The opposite lung remained throughout free from signs of disease. The left pleural cavity gave every indication of draining freely, and the wound was healthy in appearance. The urine was free from albumen, and from other signs of nephritis, and yet the patient gave every evidence of being extremely septic, by his emaciation, low delirium, feeble pulse and steadily increasing prostration.

Only a partial autopsy could be obtained, this including only an examination of the lung of the diseased side, which was removed by enlarging the wound made in the chest. There was found to be perfect drainage from the pleural cavity. The left lung was, however, honeycombed by small abscesses, varying in size from a pea to a grape.

The origin of the sepsis, then from which the child was suffering, was in the lung itself, and not in the pleura.

Remarks: No cases present to the physician greater difficulty than those like the above. The pleural cavity has been opened and drained, and yet the temperature continues high. What is the explanation? Is it a saculated effusion, only one of the pockets of which has been evacuated? Is it too small a tube, or is the drainage imperfect, because the tube is blocked? Is it an infection of the wound itself? Is it disease of the opposite lung, or is the temperature dependent upon the pathological process in the lung itself; or, lastly, is it to be looked for outside of the chest? All of these points must be taken up in order, and the case examined with greatest care to exclude, one after another, of these conditions. In my own experience, the exact parallel of the case whose history has just been related, has never been seen. Imperfect drainage is, by all odds, the most frequent cause of rise of temperature after operation. I have seen it, however, depend upon malaria, influenza, and many other conditions outside of these.

The pathological condition existing in this case placed the patient outside the possibility of relief by any treatment, medical or surgical. It is my own belief, that the fact that the empyema was not recognized until the child had been three weeks sick, had very much to do with determining the final result. If the lives of these children are to be saved, the first and most essential thing is an early evacuation of the contained pus. Every day of delay only adds to the child's depression, and diminishes the chances of recovery.

Sterilized Milk—When infants fail to thrive on properly diluted sterilized milk, the fault is not to be looked for in the sterile quality of the food, but in many other factors, among which an infected alimentary canal, and the venerable age of most city milk, are the most prominent to my experience. No length of boiling can destroy the chemical toxines found in all old milk, and not even the most perfect milk, taken from the cow or the human breast, can cure an infected alimentary canal.—*Seibert, in the Polyclinic.*

CONGENITAL ABSENCE OF BOTH ARMS; CONICAL STUMP; AMPUTATION; RECURRENCE.

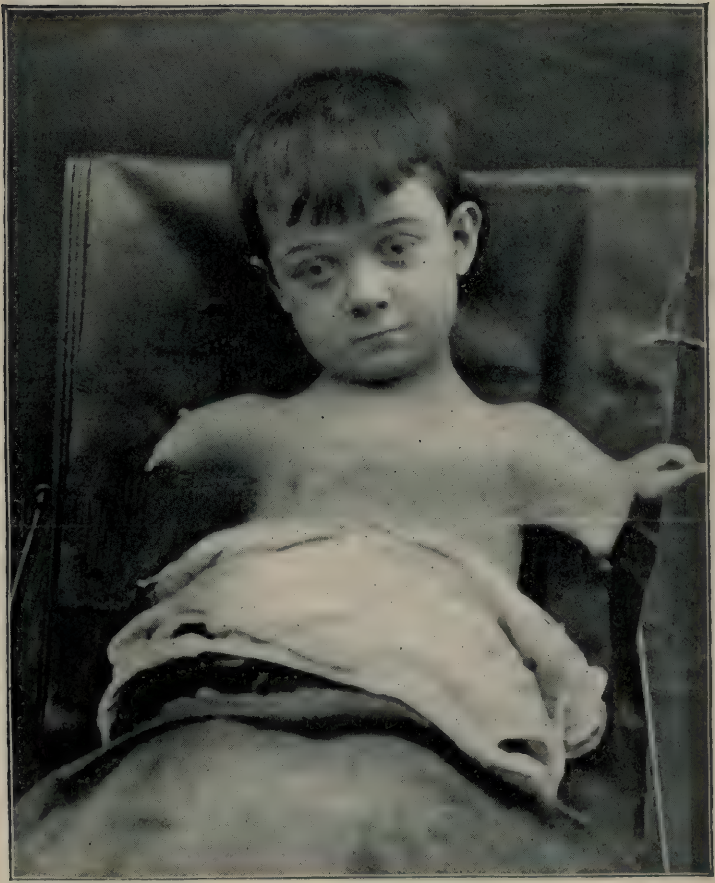
BY CHARLES L. SCUDDER, M.D.

Surgeon to Out-Patients, Massachusetts General Hospital.
Boston, Mass.

I wish to place on record the case illustrated in the accompanying photograph. It is, I believe, unique in surgical literature. The child was brought into my clinic at the Massachusetts General Hospital in 1892, presenting the appearances seen in the photograph. The right stump was conical, the bone projecting from its end which was surrounded by a granulating area.

The skin and the soft parts were reflected back by a longitudinal incision down to the bone and the bone removed for about two inches. The wound was sutured and healed normally.

In the clinic of 1895, this child returned presenting in the same stump an overgrowth of bone which was again removed. I suppose that in this instance the same causes have been at work in the production of this condition as in the cases recorded by Powers, (*New York Medical Record*, June 7, 1890) namely, the elongation of the bone at the upper ephipysis of the humerus which has taken place more rapidly than the growth in the soft tissues, this disparity in the growth of the hard and soft parts causing a conical stump.



SARCOMA OF THE JAW IN A CHILD.*

BY W. L. RODMAN, M. D.,
Louisville, Ky.

A boy four years of age was brought from Clark County, Ky., with a tumor of the face. Eight weeks before, the parents noticed a small swelling in front and above the lobe of the left ear. He has not suffered much pain, but is drowsy, sleeping most of the time. He bears manipulation well. The tumor seems immovable. It evidently began in the parotid gland and extended to the ramus of the jaw, pushing the pharynx to the right and interfering with deglutition. It is probably a round cell sarcoma, acutely malignant. In the removal of any malignant growth with any prospects of success, we must remove not only the tumor itself, but the invisible zone. There is no capsule or any effort at encapsulation in such cases. The question is whether the malar bone is involved. The only hope, in my opinion, is in the use of the toxines of erysipelas and the bacillus prodigious.

The boy has lost weight recently. I notice a symptom characteristic of sarcomata as a class, which is a sense of fluctuation. I passed an aspirating needle in two places with a negative result. It is impossible to state positively whether the growth springs from the upper or the lower jaw, but this fact adds no encouragement to the case. When studying the subject of tumors of the jaw some years ago, I went over the literature of the subject and found that 76.4 per cent. of all tumors of the upper jaw were malignant, and $81^{6}/_{16}$ per cent. of the lower jaw. With regard to the result of the injection of toxines, I would say that the subject was discussed at the recent meeting of the Surgical Section of the American Medical Association. Dr. Senn, of Chicago, used it in nine cases with negative results. Dr. Fenger, of Chicago, reported several cases with no perceptible improvement. Dr. Keen, of Philadelphia, saw no improvement in his cases, save in one case. Dr. Coley reported that he had seen eighty-four cases in his own and in the practice of others, and of these, fourteen were cured permanently.

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* Presented to the Louisville Academy of Medicine, June 3, 1895.

Editorial.

SCARLET FEVER.

THE various papers on scarlet fever in the present number of the ARCHIVES show what every medical man of experience has discovered, that in its obscure and mild forms it is one of the most difficult of diseases to diagnosticate. It differs greatly in its manifestations in different epidemics and in different individuals. Few diseases present more varying conditions at the outset. There is no symptom which may not be wholly absent during the early stages or which, on the other hand, may not be so exaggerated as to obscure and overshadow all others. To add to the difficulties of diagnosis, numerous conditions arising from intestinal and septic disorders, as well as various drug eruptions, closely resemble scarlet fever in its early stages. These peculiarities render the diagnosis of many sporadic cases a matter of the utmost difficulty. As yet the bacteriologist can render us no aid, as he does in diphtheria. The diagnosis must be made upon clinical evidence only.

Some of these difficulties are clearly demonstrated by the anomalous cases reported by Dr. Starr. These cases show that some of the most constant symptoms of scarlet fever may be wholly lacking, not only during the first days, but through the whole course of the disease. Dr. Blackader, in his admirable paper on some of the eruptions which simulate scarlet fever, describes most lucidly conditions which render diagnosis of the more serious disease difficult, and often, at the outset, impossible. Thorough reading of such a paper, written by an experienced and unusully accurate observer, cannot fail to prove of the greatest value to the practitioner in aiding him to make a diagnosis, when prompt diagnosis is of vital importance and failure to make a correct one may prove an error fatal to many children. The subject of so-called surgical scarlet fever is also an important one and is most judiciously discussed by Dr. Jennings. The discussion on the whole is a notable one, and very instructive to the general practitioner. Scarlet fever is so closely simulated by other diseases, and is so frequently obscure in its early manifestations, that diagnosis must continue to be difficult so long as we are obliged to rely upon clinical evidence alone.

SYMMETRICAL GANGRENE.

THE case of symmetrical gangrene reported by Dr. Wilson is one of extreme rarity and of the greatest interest. Symmetrical gangrene was first described by Raynaud. The cases reported by Dr. Wilson, however, cannot apparently be classified as cases of Raynaud's disease. That disease effects chiefly nervous and chlorotic children or young adults, especially when reduced by exhausting diseases. The gangrene appears in the extremities, chiefly in the fingers and toes. The cases described by Dr. Wilson are apparently quite different from a clinical standpoint. While the pathology of the three cases reported is extremely uncertain, it would seem, as the author points out, to rest upon an entirely different basis from those cases of gangrene of a leg or foot resulting from embolism or thrombosis. It would seem to result from some profound change in the condition of the blood. The possibility of local microbic infection, favored by lowered vitality of the patient, has been urged as an explanation of such cases. The change is perhaps due to some secondary infection. As such conditions follow infectious diseases, it is difficult to escape the belief that some, as yet obscure, bacterial action or product is concerned in their production. The curious complications and grave sequelæ of scarlet fever indicate what profound influence the scarlaterial poison has upon the whole organism. Their study clearly teaches the necessity of attentive management of every case, however mild, and of caution in prognosis.

THE SCHOOL TEMPERANCE LAW recently passed by the Legislature of New York reaches the height of absurdity in legislation. The evils of intemperance and the suffering which follow in its train are too well known to the medical man. The desirability of promoting temperance and restraining the drinking propensities of the people is acknowledged by every right-thinking person. It does not follow, however, that laws of this character are required or will prove of any material benefit. The law requires that at least four lessons a week, for ten weeks each year, shall be given in every public school, to every pupil below the second year of high-school, upon the nature of alcohol and other narcotics and their physiological effects. Children who cannot read must be taught orally. It is certainly irrational to endeavor to teach children who are learning their letters the physiological effects of alcohol—an element which disturbs stomach, liver, kidneys, and nervous system. Physiology is properly a high-school study, and forty lessons a year by teachers more or less incompetent, to little children at their A, B, C's, would be ridiculous if it were not actually wrong. Children who pass through all the grades will be compelled to devote as much time to physiology as is given in any medical college in the country. The interference of the Legislature by mandatory legislation with the course of study in every public school of the State is an evil of no small importance. It is a significant fact that this law was passed unanimously, receiving the votes of men sent to Albany by the rum power for the express purpose of looking after its interests.

IN A RECENT PAPER on heredity, Drs. Chase and Chapin conclude that physical characteristics, and those distinguishing the human species, are transmissable as an inheritance, but knowledge, genius, and culture are not an inheritance, but depend rather on influence, education, and environment. Mental receptivity is transmissible; psychic qualities are not necessarily an inheritance. They require favorable surroundings for growth and development. Insanity as a disease is not transmissible by inheritance, but may be acquired or evolved from a neurotic heredity as a basis. A neurotic predisposition is transmissible by inheritance, but there is no absolute rule that it will be transmitted in any given case. Ingrading of neurotic temperaments is most conducive to the creation of a neurotic heredity.

PASTEURIZED MILK, now so largely used for the purpose of obviating certain supposed disadvantages of sterilized milk, may prove very unsafe if the details of the process are not properly carried out. A most important detail is rapid cooling after the application of the heat. A temperature of 167° F. kills all pathogenic germs, but it does not kill their spores. If the milk, after heating, is not properly cooled, and is allowed to stand in a warm place, it may remain at a temperature exactly adapted to the growth and development of these spores. The process thus becomes a source of danger rather than a safegaurd. That this danger is actual, and not a mere possibility, has been demonstrated by practical experience. The process undoubtedly possesses advantages over sterilization. It is, however, somewhat more intricate in its details, and carelessness may result fatally to the infant to whom the milk is given. When Pasteurized milk is prescribed, the mother or nurse should receive careful personal directions, and the process should be carefully supervised by the doctor during the first few days. Occasional investigation as to the care with which the details are carried out is also a wise precaution.

THE publication of the papers read before the American Pediatric Society in the exact order of the programme is quite impossible. It has been necessary to hurry a few to give the authors the priority of publication properly due to them. The order of others has been changed to afford in successive monthly issues proper distribution of illustrations and charts. An average of nearly forty pages, has been devoted each month to these papers. Their publication will be completed as early as possible.

Bibliography.

A Treatise on the Nervous Diseases of Children, for Physicians and Students. By B. Sachs, M. D., *Professor of Mental and Nervous Diseases in the New York Polyclinic; Consulting Neurologist to the Mt. Sinai Hospital; Neurologist to the Montefiore Home for Chronic Invalids; Ex-President of the American Neurological Association.* New York: William Wood & Co. 1895. Pp. xvii.—666. Price, $5.00.

An increasing amount of nervous disease seems to be a necessary accompaniment of advancing civilization. The greater the burden placed upon an organ, the greater is its liability to break down or to become disturbed in its action. Modern life is constantly adding new burdens to the nervous system, and disease follows in its train as a necessary result. The adult is the first to feel the result of such burdens, but after a few generations it is manifest in the children. The children of nervous and physically defective parents inherit an unstable and irritable nervous system, which renders them liable to various functional and organic nervous diseases. The publication of a book dealing exclusively with such diseases is a notable event in neurological and pediatric literature. It would have been impossible to produce such a work a decade ago. Its publication now is not so much due to the fact that nervous diseases are increasing among children as to the increase of our knowledge regarding them. Such strides have been made in our knowledge, both in pediatrics and neurology, during recent years, that the proper consideration of this subject could not be given in a small manual. A handsome octavo volume is the result.

In accomplishing the important task of presenting this knowledge to the profession, the author has been eminently successful. Probably no other American could have done the work so well. Not only does his book review our present knowlege on the various subjects of which it treats, but every chapter shows the results of original research, and every page bears the imprint of large experience. Upon some subjects, as the cerebral palsies of infants, the author has made some of the most important contributions to be found in modern medical literature. The work is original to a much larger extent than works of this size are wont to be.

The first chapter on methods of examination is admirable, and is written as only an experienced teacher could write. In the body of the work, the somewhat unusual plan is adopted of considering functional diseases first. Among children, the functional disorders constitute over one-half of all their nervous diseases, and are of very great importance. Many of these functional disorders have also an important bearing upon the future life of the child, and are so closely related to so many organic diseases that their explanation seems first necessary. The first chapter is devoted to convulsions. Although a convulsion is properly a symptom, practically it requires especial treatment aside from removal of the cause. The author's method is to treat every case by inhalations of chloroform. This has the serious drawback that any bad results which may follow are usually attributed by the friends to the treatment. He does not advise the use of chloral until after a day has passed, morphine being used as soon as the acute stage is over. As to the ultimate results, the author, relying upon the careful study of infantile cerebral palsies and epileptic convulsions in adults, is confident that convulsions often give rise to serious after results. This possibility makes acute convulsions a grave matter, so that every case should receive prompt treatment. As to epilepsy, while the author fully believes in hereditary or idiopathic epilepsy, he affirms that it is not nearly so frequent as it is supposed to be. Careful examination into the early history of each case will show that a large proportion have sustained some cerebral or traumatic injury early in life. In the treatment of epilepsy, he believes that it is best to proceed on the theory that the attack is due to the over action of the cortical cells. Whatever the explanation may be, however, up to the present time no drug has been found which can be substituted for the bromides. Although the author does not affirm that the disease is often cured by the bromides, he agrees with most competent authorities that they are the most efficient drugs at our command. The general treatment advised is conservative and judicious.

The chapter on hysteria is most interesting. True hysteria, the author believes, is comparatively a rare condition in adults, especially in the Anglo-Saxon race. This is in accord with the present teaching of the most competent neurologists. As knowledge of nervous disease increases, the diagnosis of hysteria is made less frequently. It is an extremely rare disease in children. It does, however, occur, and its diagnosis is then important. The chapter on chorea is also an important one. The causes as stated in their order of importance, according to the belief of the author, are: fright, the various acute diseases, such as articular rheumatism, scarlatina, and cardiac disease. Upon the relation of rheumatism to chorea, the author is quite non-committal. He seems to be unwilling to regard rheumatism as a factor in causing chorea when it does not precede the choraic symptoms. He quotes Hirt, however, with some approval of the idea that there may be a common toxic agent which, if it affects the cortex, will produce choraic movements; if it affects the joints, acute rheumatism. He has clearly fallen into the error common to many neurologists of making a diagnosis of rheumatism only when acute articular symptoms are present—a manifestation of the disease not usually seen in children. The treatment advised is judicious in the extreme, rest being regarded as of the utmost importance. Among drugs, arsenic is given the first place, but is not regarded as a specific. The chapter on choreiform diseases is an important one, as is also that on tetanus and tetany. In these chapters, many old theories have been discarded, and the work is fully in accord with the most modern views. The chapter on headaches is an especially good one, being extremely clear and concise. The section on migraine and the headaches which precede it in childhood is also of much interest. The chapter on the disorders of sleep is very short, and might have been more complete with profit.

In the portion of the book devoted to organic diseases of the nervous system, the diseases of the peripheral nerves are first considered, it being the plan of the author to proceed from the simpler to the more complex disorders. The chapter on multiple neuritis is a very important one. The advances which have been made during the past decade in our knowledge of this disorder have been great. Many diseases which were formerly supposed to be due to an affection of the spinal cord and were confounded with poliomyelitis are now known to be due to polyneuritis. This latter term is now used to express all those disorders in which the symptoms are due to disease of several nerves of the body. In this chapter, diphtheritic paralysis is considered at considerable length. The lesions in this condition are similar to those which occur in other forms of multiple neuritis, and consist of inflammatory and congestive changes in the nerves, due, probably, to microbic poisons.

The remainder of the book is divided into three general sections. The first is devoted to diseases of the spinal cord; the second to diseases of the brain; the third to diseases of the mind. One of the most satisfactory chapters of the first section is that upon poliomyelitis. The author concludes that in this condition the inflammatory process which occurs in the anterior gray matter, as is conceded on all sides, is interstitial and not parenchymatous. Other chapters of interest are those on hereditary diseases of the spinal cord and progressive muscular atrophies. In the second section, after an admirable review of the anatomy and physiology of the brain, meningitis is first considered. This is an excellent chapter, and presents the subject from the most modern standpoint. It is a subject regarding which opinions have largely changed during recent years and these changed views are most satisfactorily presented. One of the most interesting chapters is that on infantile cerebral palsies. It is here that the author has done some of his best work. The subject is a most important one, and worthy of even more space than has been devoted to it. About forty pages are devoted to diseases of the mind in children, and form an important portion of the work.

The directions regarding treatment are especially satisfactory throughout the work, full details being given in most instances. The author has very wisely given in concise form the treatment which his own experience has led him to approve, and has not burdened his pages with a list of therapeutic agents and suggestions of more or less questionable value. The illustrations are admirable, and contribute immensely to the value of the book, which is on the whole a most important addition to American medical literature.

Current Literature.

I—MEDICINE.

Taylor, R. Tunstall: Recent Methods of Infant Feeding. (*Medical News*, 1895, Vol. lxvi, No. 22.)

One cow's milk, so commonly advised for infant feeding, is not a fortunate suggestion. If that cow is sick, the whole food of the child will be contaminated. On the other hand, if the milk of a whole herd is mixed together, then there is much less danger of the child's being infected. Jersey and Alderney milk is too rich in fat for nursery purposes. New York and Boston are at present the only cities which possess the thoroughly scientific milk laboratories, where physicians may send prescriptions for a milk of any desired analysis In preparing milk, it should be borne in mind that cane-sugar is not to be used, as it readily ferments and causes colic. Sugar of milk alone should be employed.

Milk as a Food for Children. (*Modern Medicine*, June, 1895.)

An editorial review of a discussion on the therapeutic value of iron, as given at the German Congress of Internal Medicine, held in April, presents some facts of considerable practical interest. The principal paper on this subject was by Prof. E. Bunge, the physiological chemist of Basle, Switzerland. Prof. Bunge showed that milk was especially deficient in iron; while wheat contained nearly three times the quantity. He declared that the inorganic compounds of iron were not assimilated by the system. Prof. Huebner said that he had noticed, as a result of long years of clinical experience, that anæmic children did not prosper on a prolonged milk diet. These anæmic children seem to need more iron than is found in milk. Prof. Bunge's observations seem to show that our prescriptions of the various preparations of iron are practically worthless. He says that we should rather prescribe those foods which are generously supplied with this product. An exclusive diet of milk for children, especially anæmic children, cannot be regarded as the best practice in the light of these investigations. Some food, as that devised by Prof. Just (*Practical Medicine*, August, 1895), composed of wheat, and other cereals, richly supplied with iron, may be added to the cow's milk, thus supplying this deficiency. Thus prepared, there is no reason why milk cannot be regarded as a perfect food.

II—SURGERY.

Hirschsprung: Intussusception in Children. (*Jahrbuch Kinderheilkunde,* 1895, B., xxxix., H., iv.)

In 1877, the author reported eight cases of intussusception which had come under his personal observation. In 1884, nineteen were reported. The first case was seen in 1873, and at the time of writing, July, 1894, the author had personally observed sixty-four cases occurring in sixty-one children during twenty-one years. In three, the intussusception was repeated. The interval between the attacks is not definitely stated. The majority were hospital cases. Coinciding with the observations of others, the majority were boys, forty-six of the patients being boys and eighteen girls. Forty-six were under one year of age, nine were in the second, and nine between two and eight years. The youngest child was forty-nine days old. The oldest was between seven and eight years of age. The age at which the trouble occurred most frequently was from the third to the ninth month, more than one-half of the cases occurring during this period. Among the forty-six infants who were under one year of age, thirty-nine, or eighty-five per cent., were breast-fed exclusively. Among the remaining fifteen, thirteen had received other food than the mothers' milk. Only two were bottle-fed from birth. The more frequent occurrence of the disease in the breast-fed is accounted for by the author and others, in that these children are better developed and all the functions of the body are performed in a more vigorous manner. The patients were all well nourished and of the average weight. None were tubercular. In a few there was a mild degree of rachitis. One-third of the cases, previous to the acute onset, were absolutely healthy. The majority, however, were suffering from some intestinal disorder. In fourteen, diarrhœa of over ten days' standing preceded the strangulation. In others, constipation had been troublesome. Cough was present in a very few. The season of the year appeared to have no influence whatever; as many developed during the cold as during the warm weather.

The treatment varies according to the location of the intussusception, whether it is in the large or the small intestine. The determining of the location was successful in twenty-eight. In five of these laparotomy was performed. There was inv. ileo cœcalis in eleven, inv. coli in six, inv. iliacæ in six, and inv. ileo-colicæ in five. The inv. ileo-cœcalis is therefore the most frequent form met with, and the form that produces the most typical symptoms of the affection. Of these, the majority were about five months old; well nourished, breast-fed children, with stomach and intestines in the best of order. Suddenly the child is taken with pain and vomiting. There is perhaps a normal movement, which is soon followed by a large mucous stool containing considerable blood. There is usually considerable tenesmus. The vomited material nearly always contains bile. After twenty-four or thirty-six hours the pain and vomiting subside, and the child sinks into a peculiar, somewhat apathetic condition, simulating shock. The passage of blood and slime may continue. The temperature is not high as a rule, and the pulse is variable. For the first day or two the stomach is soft, and chloroform is seldom required for examination at this time. The tumor in these cases will be most frequently found to the left of the umbilicus; less frequently at the right of the umbilicus. The tumor is usually quite large, slightly movable. About the fourth day the scene changes. The temperature rises, the pulse becomes frequent, and the abdomen tympanitic. Death soon follows.

The inv. coli occurs most frequently in older children. Five of the cases were in children between eighteen months and four years; one was seven months old. In one, the child was perfectly healthy; in the others, there had been constipation or diarrhœa of some weeks' duration. The symptoms in these cases differ in but two points from the preceding. The passages were in one-half the cases composed of a peculiar, clear, watery mucous, and the tumor was more movable than in the cases of ileo-cœcal invagination. The location of the invagination is in nearly all the cases either in the descending colon or sigmoid; the tumor is consequently most frequently found in the left side of the abdomen. An exception to this occurred in but one of the six cases. In this case, autopsy showed the ascending colon to be invaginated into the transvere. The tumor extends usually from the border of the rib downward, and may often be felt upon rectal examination.

It is impossible to separate clinically the cases of inv. ilei, and inv. ileo-colica. They will be considered together.

All the cases but one were under nine months of age, eleven in number. Nine were fed both at the breast and on the bottle. All were well before the intussusception developed. In one case the child was just recovering from opium poisoning. There appears to be less mucous and blood passed than in the other varieties, and this is perhaps a point of some value in the differential diagnosis. The location of the tumor in this class of cases is unusually difficult. In six, it was impossible to make out any tumor at all. The reason for this is probably due to the small size of the tumor. In five, it was found to be from six to ten c. m. long. In the opium poisoning case, the tumor was fourteen c. m. long. In the eleven cases, the tumor was found on the right side in eight.

For reasonably positive diagnosis, chloroform is an absolute necessity. Thirty-eight of the children (sixty per cent.) record an unquestionably good showing as regards treatment.

Massage is advised, and was successful in four. This method of treatment is particularly applicable when the intussusception is in the small intestine, for in these cases the usual method (the forcing in of water) is of no value. However, as previously remarked, it is impossible in many of these to locate the tumor; if such is the case, operative procedure should be commenced at once. In all other cases, when the massage fails, the treatment by pressure with water should be at once brought into use, and when this fails, operation should be resorted to as early as possible. The author performed laparotomy upon five, and all were fatal. Enterotomy was performed twice; one recovery. The case which recovered was that of a girl twenty-two months old, who had been taken ill two days before admission into the hospital. There was invagination of the colon, with repeated prolopse. The tumor extended from the border of the rib to the pelvis. The usual treatment availing nothing, and the child becoming worse, operation was decided upon, and an artificial anus was formed. An opening was made into the small intestine, on the right side, from which gas and mucous escaped, but no fecal matter. The vomiting subsided, and on the following day the child had a normal stool; on the third day the tumor had completely disappeared.

Coley: The Operative Treatment of Hernia in Children. (*American Journal Medical Sciences*, 1895, Vol. cix., No. 5.)

During the past three years, the author has operated upon one hundred and thirty-three children, under fourteen years, for a radical cure of hernia. The indications for operation are tabulated as follows:

1. Cases of adherent omentum.
2. Cases complicated with reducible hydrocele.
3. Cases irreducible or strangulated.
4. Cases unable to obtain the care requisite to successful mechanical treatment.
5. Cases where mechanical treatment has been faithfully tried for a number of years without benefit.

The majority of the cases operated upon belonged to the last two classes. Of the total one hundred and thirty-three cases, five were femoral, four umbilical and ventral; one hundred and twenty-four were inquinal; ten were females, one hundred and fourteen were males.

The methods and technique of the operation were as follows:

First, ligation of the sac and suture of the canal without transplanting the cord was employed in ten cases. The results were as follows:

a. Catgut. In two cases, the buried sutures were of simple non-chromicised catgut; of these, one relapsed in four months, although a truss was worn after operation. The second case is well three years after operation.

b. Silk. Silk was used for the buried sutures in one case. Primary union occurred, but soon after leaving the hospital, two small sinuses appeared in the cicatrix, and refused to heal until the silk suture had been extruded. Relapse occurred in three months, in spite of the constant support of a truss

c. Chromicised Catgut. This was used for buried sutures in four cases. Two of these were perfectly sound two years and nine months after operation; a third, two years and ten months; the fourth, two years and eleven months.

d. Kangaroo tendon was employed in three cases. Of these, one is well without recurrence two years and five months after operation; a second, eight months, and the third was not traced.

All the ten cases healed primarily. Of the nine cases traced, seven are well without recurrence. The two relapses are due, one to the use of silk and one to the catgut.

Bassini's method, with the substitution of kangaroo tendon for silk in the buried sutures, was employed in one hundred and twelve cases.

The author, believing that the technique of the Bassini's operation is not generally understood, owing to the few accurate descriptions that have appeared in English, outlines the important steps in the operation:

1. The *external incision* begins at a point nearly or quite on a level with the anterior superior spine, continues obliquely downward, parallel with and about one-half an inch internal to Poupart's ligament, and ends at the centre of the external ring.

2. The incision is rapidly carried down until the aponeurosis of the external oblique is freely exposed for a distance of two and one-half to three inches; a director is then passed through the external ring just beneath the aponeurosis and the aponeurosis is divided well above, *e.g.*, one-half to one inch above the internal ring.

3. The cut edges of the aponeurosis are held up with forceps and dissected free from the underlying muscles as far as the edge of the rectus internally and externally until the shelving portion of Poupart's ligament has been clearly exposed.

4. The sac and cord are then isolated *en masse*, and this is best accomplished with the fingers and blunt-pointed curved scissors. If the peritoneal layer of the sac is first reached, the dissection is easy, rapid, and bloodless.

5. The cord and vessels of cord are now separated from the sac, and this, too, is best done with the fingers. The separation is carried high up within the internal ring, and the sac is ligated or sutured where it merges into the general peritoneal cavity.

6. The cord is held up and the edges of the aponeurosis rolled back, while from three to five buried sutures are introduced beneath the cord. These are best introduced from within outward, and should include the internal oblique and transversalis muscles, the transversalis fascia (and sometimes the edge of the rectus) on the inner side, and the deep shelving portion of Poupart's ligament on the outer side. The lowermost suture should embrace the conjoined tendon.

7. The cord is now replaced and the cut aponeurosis is closed over it by means of a continuous suture, extending as near the pubis as possible without causing undue constriction of the cord.

8. Closing the skin-wound with interrupted sutures, without drainage, completes the operation.

The entire operation may be done in fifteen minutes. But one exception was made by the author to the method of Bassini, and that was in the substitution of the kangaroo tendon for silk in the buried sutures. The character of the suture material he believes to be one of the most important factors in the success of any operation for the radical cure of hernia. Its non-irritating properties, and the time required for absorption—two or three months—are sufficient to establish its superiority to all other suture material for hernia operations. Of the one hundred and twelve cases operated upon by the Bassini method, with kangaroo tendon for the buried sutures, primary union occurred in one hundred and nine, or ninety-seven per cent. In but one case was slight and superficial suppuration.

All but two of the author's cases have been traced, four having gone without truss and without relapse two and one-half to three years; ten, two to two and one-half years; eighteen, eighteen months to two years; seventeen, one year to eighteen months; twenty, six months to one year; forty-five, less than six months; forty-nine have gone longer than one year.

There was but one death, caused by double-pneumonia, in a child five years old.

Six cases were operated upon for strangulated hernia. One was six weeks old, one twelve months, one seven and one-half months, one five months, and one aged twenty-three months. All but one recovered. Simple herniotomy was performed.

The objection to silk, silk-worm gut, and silver wire for buried sutures, however aseptic, lies in the fact that they are foreign bodies, and when placed near the surface of the body, particularly in a part subjected to constant motion, there is an effort on the part of nature to rid herself of them. Some surgeons use the non-chromicised catgut for the buried sutures, and go so far as to state that the sooner the sutures are absorbed the better. In a previous paper, the author pointed out that the tissues to be united in closing the hernial canal are largely tendinous, and the experiments of Busse show that perfect tendinous union does not occur under three weeks, or just the period of time required for absorption of the kangaroo tendon.

Dressings and After-Treatment—In all the cases the dressings were moist iodoform and bichloride gauze, held firmly in place by rubber plaster over which cotton and a muslin spica were applied. The scrotum was always left unexposed. Fixation was secured by means of a plaster of paris spica, extending from the edge of the ribs to the ankle. This was kept on until the first dressing, or about the eighth day. The skin sutures are entirely of catgut. None of the cases, with the exception of two or three of the early ones, operated upon by suture of the canal with catgut, have worn trusses since the operation. Of the one hundred and twelve cases operated upon by the Bassini method with kangaroo tendon for the buried sutures, not a single relapse occurred, and not a single case has worn a truss.

McGraw, Theodore A.: Surgical Scarlet Fever. (*The Physician and Surgeon*, 1895, Vol. xvii., No. iv.)

That surgical operations render children exceedingly susceptible to scarlet fever is a fact well known to surgeons. In the resumé of the subject in Warren's recent work on Surgical Pathology and Therapeutics, numerous high authorities are cited to substantiate this assertion. Sir James Paget, Horsley, Thomas Smith and others describe cases of this character. Smith, indeed, in forty-three cases of lithotomy in children, had the operation followed in no less than ten by an outbreak of scarlet fever. Warren concludes that "a certain number, and probably a majority, of cases of so-called surgical scarlet fever are cases of genuine scarlatina." In Guy's Hospital, in 1879, four cases were observed in succession under the care of different surgeons, and in consequence thereof operations on children were temporarily postponed.

In that hospital, during a series of years, nearly thirty cases of scarlatina were observed in children after operations, and Goodheart, after careful investigation, has no doubt of the correctness of the diagnosis. Hillier remarks that in the hospital for sick children, of the children who contract scarlatina, a very large proportion have been the subjects of a surgical operation within a week before the rash appears. Although the evidence in support of these views is overwhelming, there have nevertheless been many doubters as to the specific character of the disease in these cases.

Hoffa, a German authority, qouted by Warren, has attempted an analysis of the cases reported, and divides them into four types:

(1) Cases followed by a vaso-motor disturbance and characterized by a transient erythema of urticaria.

(2) Toxic erythema, due to absorption from recent wounds. These are transient in character, and vanish within twenty-four hours. The absorption of antiseptics, such as corrosive sublimate, may cause some of these eruptions.

(3) Eruptions due to profound septic intoxications. These are various in kind and irregular in character. They may last for several days.

(4) Cases of genuine scarlatina.

The author reports a case which might readily be considered one of surgical scarlet fever. A boy of fifteen was seized on February 15th with symptoms of appendicitis and was operated upon on the 19th. The operation was successful, and no septic symptoms appeared throughout. On the 23d scarlatina made its appearance, from which he died on March 1st. The autopsy showed that death did not occur from septic poisoning or from any abdominal complication.

The value of this history is in the demonstrated fact that this case of surgical scarlet fever, in the person of a lad who was said to have had scarlatina before, did not originate in septicemia or pyaemia. There was not one of the three physicians who were present at the autopsy who was not surprised at the entire freedom of inflammatory material exhibited by the abdominal cavity.

Putting aside those cases of septic eruptions in which the evanescent and partial character of the rash and the absence of other symptoms make the diagnosis easy, the author doubts whether the so-called surgical scarlet fevers ever differ in nature from those termed idiopathic. He is fully in accord with Sir James Paget, who insists upon the specific contagion in these cases, notwithstanding the fact, that the somewhat disorderly appearance of the symptoms in surgical cases, has led to the belief that they are not genuine scarlatina. A grave responsibility rests upon the surgeon in these cases. A mistake in diagnosis, or a belief in the non-contagious character of the disease, will tend to spread it broadcast in the family and in the community.

Langsdorff: The Treatment of Erysipelas with Strong Alcohol. (*Centralblatt für Chirurgie,* 1895, No. 8, p. 189—*Medical News,* Vol. lxvi., No. 12.)

Langsdorff reports the employment of topical applications of strong alcohol in the treatment of thirty-two cases of erysipelas. Soft, thick linen compresses are saturated with the alcohol, and are renewed every fifteen or twenty minutes, being covered with dry cloth and gutta-percha tissue. If the face is affected, cotton compresses are used instead of linen as adapting itself better to the irregularities of the surface. The compress should be saturated with alcohol and frequently changed. Some discomfort was experienced from the applications when the face was involved. The redness and tension often disappear in the course of eight or ten hours, after which the intervals of application may be lengthened. Recovery, as a rule, resulted in the course of two or three days. If the morbid process manifested a disposition to extend, the applications were made to include the new areas involved. For the dryness of the skin following the applications, lanolin was found serviceable. Official absolute alcohol, diluted with one per cent. of water, was employed.

Murray: Three Cases of Intracranial Abscesses—Recovery in each Case. (*British Medical Journal*, No. 1775.)

CASE I—The patient, aged five years, was admitted to the hospital on account of loss of power of the left hand and epileptic seizures affecting the left upper extremity, and the left side of the face. Two weeks before, the father had struck the child with a poker on the right side of the head. There was free hemorrhage; the wound was cleansed and plaster applied. The child appeared in her usual health until two weeks after the accident, when she ran into the house crying because her left arm and left side of the face were twitching. The twitching continued without loss of consciousness for one hour; when examined by the author there was paralysis of the left arm, involving chiefly the hand, which assumed a claw-like position. There was a small sloughing scalp wound in the right parietal region. The bone here was bare and a probe could be passed through a small opening into the cranial cavity. The author trephined at this point, and at a depth of two inches opened an abscess, a drachm of thick non-offensive pus escaping. There were no more fits and the child made an excellent recovery. The power in the paralyzed arm was soon regained. Three years after the operation there was no sign of mental impairment.

CASE II—A case of tempero-sphenoidal abscess. This was the result of middle ear disease. The patient was well four weeks previous to her admission to the hospital, when she had great pain in her left ear with discharge. In a few days these symptoms were followed by convulsions. There was constant frontal headache and occasional vomiting, but no fever. There was a slight divergent squint of the left eye and the pupil was dilated. There was no weakness of the arm or leg nor aphasia. There was double optic neuritis more marked in the left eye. A curved incision was made corresponding to the line of the squamous suture and a disc of bone removed above the external auditory meatus. An abscess was found one-half inch in the brain tissue from which three ounces of pus escaped. All the symptoms improved and the child was perfectly well one year after the operation.

CASE III—Cerebellar abscess. A boy aged eleven had had a discharge from the right ear for three weeks. There was considerable headache and frequent vomiting. There had been no convulsions. There was a painful swelling over the right mastoid region. The temperature was 100° F. A vertical incision was made over the mastoid process and a subperiostial abscess discovered. Following the operation the symptoms were rather worse than better. The temperature varied from 98° to 100°, the pulse from 80 to 90 and was irregular. There was swelling and tenderness on the upper portion of the neck corresponding to the line of the internal jugular vein. The frontal headache persisted. The patient was again put under chloroform, and the mastoid antrum was opened and found to be full of offensive granulation tissue. On the further removal of bone an extra dural abscess was opened. It contained about one drachm of thick, non-offensive pus. There was no improvement following the operation. The respirations were sighing, the pulse varied from forty to sixty a minute and was irregular. There was no paralysis, the pupils were equal. There was no aphasia. The temperature was 97° F. The optic neuritis was more marked. The diagnosis was now made of abscess either in the right lateral lobe of the cerebellum, or in the tempero-sphenoidal lobe, probably in the former. The cerebellum was exposed and an abscess containing from four to six drachms of pus was found. The pulse which before the operation was twenty beats per minute immediately arose to 100 and the temperature which was 97° before operation arose to 99.6°. An uneventful recovery was made and at the time of writing the child was in excellent health.

ARCHIVES OF PEDIATRICS.

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Original Communications.

DR. S. TYNBERG'S PYGOPAGUS.*

BY A. JACOBI, M.D.,

New York.

Two female children were born April 15th, 1895, in 342 East Forty-second street, New York, in the presence of Dr. Sigmund Tynberg, with whose name the newcomers ought to be handed down to posterity. Confinement was easy, the head of one fœtus being soon followed by the lower extremities of the other, and the rest of the joined twins. The placenta was single, also the cord which divided into two branches two inches from its velamentous insertion. The twins are united below the third sacral vertebra, the sacra are united on one side, so that the babies can lie almost alongside each other; and one side, or posture, may be called front, the other back. The diameter of the juncture is about one and one-half inches. The backs of the children are straight, the upper sacral vertebræ are distinct, the lower and the coccyx are single. From one side (the anterior) the finger presses in to a great distance; not so on the opposite side. On the former the tubera ischii are very marked. There are two vaginæ, two clitorides, two urethræ, (the children do not micturate simultaneously), four labia minora, but only two majora which surround the two sets of genital organs.

There is one anus, but the rectum is double, has at least a septum; two silver probes introduced do not touch each other. The babies begin their efforts to defecate simultaneously.

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* Read before the American Pediatric Society, Virginia Hot Springs, May 29, 1895.

Tickling on the soles of the feet of one produces no effect on the other child. They live a separate life. One cries in the night and sleeps in the daytime, the other follows opposite rules. The mother looks pale and worn in proportion.

Pulse in one fœtus 122, in the other 126, both in the upper and lower extremities. Both babies are thriving.

In the following I shall give a brief outline of the history of pygopagus, which will show that Dr. S. Tynberg's case is the fourteenth on record.

Amb. Paré (*Opera Paris*, 1582, p. 734) has two cases:

CASE I.—Two girls were born 1475, at Verona, "sibi dorso ab imis humeris et nates usque arctissime cohaerentes."

CASE II.—"Anno dom. 1486, ad Hildebergam in Agri Palatini pago Robarchio (Rohrback, near Heidelberg), gemelli duo nati sunt dorsibus cohaerentes et hermaphroditi ambo." (Males with a high degree of hypospadias.)

In both cases a fair part of the vertebral columns, besides the sacra, appear to have been in common. The latter case is also mentioned by Licetus, de Monstris, Amst., 1665, p. 80.

CASE III.—Treyling's case is found in *Acta Phys.-Medica Acad. Cæsareæ Leopoldino-Carolinæ., Nat. curios. exhibentia Ephemerides*, Tome V. *observ.*, 133, p. 445.

"Gemellæ mediantibus ossibus coccygis sibi invicem connatæ" were born 1700, in Kolndorf, Krain, Austria. A Vienna surgeon tried to separate them with a medicinal caustic. The girls lived but four months. Every organ was normal but the coccyx, which was common to both. The rectum was double, but the anus single.

CASE IV.—Helena and Judith, the Hungarian girls, were born Oct. 26th, 1701, and died when twenty-two years old (Torkos in *Philos. Trans.*, vol. 50, part i, 1757.

p. 311; *Werther disputatio med. de monstro Hung.* Lips, 1707. Joh. Mich. *Eccardus Diss. Kiliae,* 1709. Geoffroy St. Hilaire.

They could walk forwards and backwards, but slowly. Anus was common, it lay between the right thigh of one and the left of the other. Vulva was single.

Defecation was simultaneous, micturition was not. Judith became hemiplegic and had convulsions, also hysterical attacks. Helena never suffered. One had pertussis, the other was spared. Menstruations differed in time, amount, and symptoms. Judith was taken sick, and both died after a fortnight, Helena having a slight fever and frequent coma. The iliac arteries and veins communicated in the pelvis.

The sacra combined from the second vertebræ downwards. Vulva and anus in common. Urethra single.

CASE V.—C. F. Wolff in *Acta Acad. Scientiarum Petropol. pro anno* 1778. P. i, p. 41.

Twer, Russia, 1778. Children (sex not mentioned) lived two months.

Half of the pelves were united, from upper margin to coccyx. Anus was in common. No other data.

CASE VI.—Barkow (*Monstra animalium duplicia per anatomen indagat.*, Lips., 1828) describes two femal fœtuses born at full term.

Perineum is common. There are two anuses separated by a septum. Three labia majora; four minora, two of which were larger (the posterior ones), two smaller. Each fœtus has a large and a small one. Vaginæ are separated by a septum. There are two urethræ and two cords. The sacrum is single below the first vertebræ; instead of the bone below, there is but a strong ligament. One fœtus had a large diaphragmatic hernia. Each had but one kidney. One had but one umbilical artery. The two cords were combined in the sacral canal. No nerves, however, originated in this combined part.

CASE VII.—Normand (*Bull. de la Faculte de Medecine* *de Paris*, 1818, No. 1) reports his "Observation sur deux jumeaux accolés dos à dos."

A woman of thirty years had two children previously. The pygopagus had four nates, one large scrotum, four testicles, one penis, one anus, one urethra, one placenta, and one cord, with two branches.

Meckel (*Müller's Arch.*, 1850) says that two cords have been observed only in fourteen cases of parietal and frontal adhesion, and in the Hungarian sisters. Also in the cases of Barkow, and Licetus (Amb. Paré). One of the (male) children was one and one-half inches longer than the other. Extremities, however, were equal. They died on the ninth day.

CASE VIII.—Molitor (*Beob. u. Abh. aus d. Gebiete d. ges. prakt. Heilk. v. oesterreich. ärzten*, 5, Wien, 1826) reports a female pygopagus.

There were one placenta, one cord, with two branches; one anus, one urethra. The infants were joined from last lumbar vertebræ to coccyx, and partial union existed between the ossa ilium. The twins were of unequal size, lived twenty-five days, and died in convulsions. No autopsy.

CASE IX.—Chrissie and Millie, born in North Carolina, in 1851.

One of the earliest descriptions is that by Ramsbotham. The children were then five years old. The union had a circumference of sixteen inches, and extended from below the first sacral vertebræ to the coccyx. There is union of the right half of the sacrum of one, and the left of the other infant. There are four tubera, one anus below the coccyx, one blind depression laterally. The single rectum is large, no septum within reach. There are two clitorides, two hymens, two vaginæ, two urethræ. Only two labia majora. The symphyses are distinctly separated. The genital organs are at some distance from each other.

The children can kiss each other; one rests on her back, while the other is on her side. They walk well, but not alongside each other. One may be awake when the other sleeps. They are hungry at different times. Pulse is not synchronous. Purgatives take effect only on one. Menstruation is synchronous. Defecation is synchronous, but Münter reports that they can hold their feces separately.

(Virchow in *Berl. Klin. Woch.*, 1873, No. 9. Tardieu *Bull. de l'Acad. de Méd.*, 2 Serie, Tome III., *Seance* 20th, 1874.)

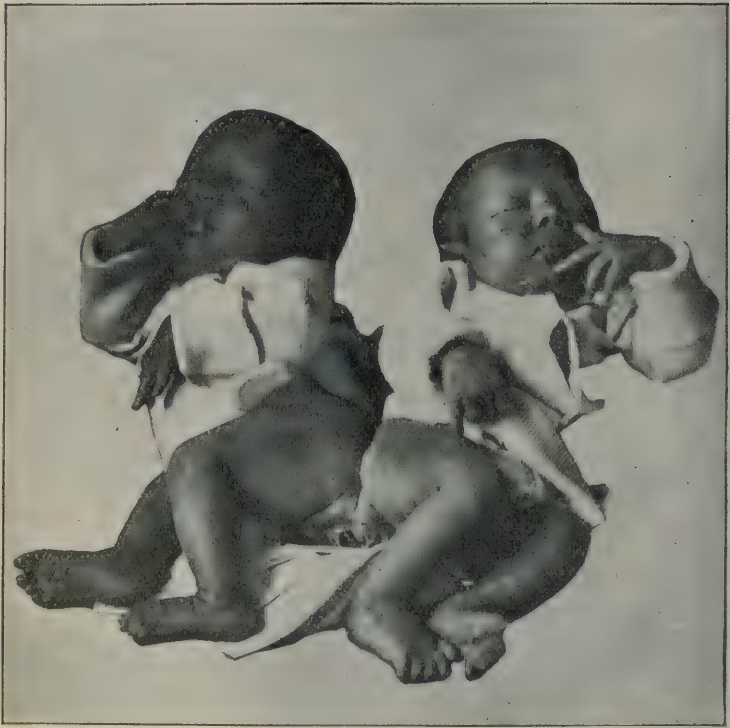
On the union there is a zone of some centimetres with common sensations. If one be touched, a sensation of something going on is felt by the other girl, but no localization is possible. While the radial pulse is not synchronous, the pulse of the arteries of the feet is, which proves a union of the aorta in the pelvis before branches are given off to the lower extremities.

CASE X.—Joly and Peyrat (*Bull. de l'Acad. de Med.*, 2 Serie, Tome III.) relate the female pygopagus born in January, 1869, in Mazères, France; one died after ten hours, the other after twenty.

One of them had a spina bifida. There were two cords and two placentæ, one vulva, one vagina, clitoris, hymen, urethra, anus. The connection of the two bodies reached probably from the first or second sacral vertebræ downwards.

CASE XI.—The Bohemian sisters, Rosalia and Josefa Blazek, born January 20th, 1878, were still exhibited in Vienna about the latter part of 1892. Breisky, in Prague, and Marchand, of Breslau (*Br. ärztl. Zeitsch.*, 1881, No. 10) furnished descriptions. Their mother was twenty-two years old, and had a female child before.

The faces are turned to one side so that there is a virtual front and back. The girls are well developed, both physically and mentally. Very careful examinations were never permitted. The pelves are connected throughout the sacra. There are two gluteal regions. Probably the two spinæ posteriores of the ossa ilium are amalgamated. There is one set of labia majora, but two vaginæ;



urethra is single, but vulva appears more triangular. The skulls are asymmetrical.

CASE XII.—Two female fœtuses of the ninth month are described in a pamphlet by Friedrich Adolph, of Frankfort-on-the-Main.

Placenta single; cord single up to twenty-four cm., then two branches are given off of forty-five and fifty cm. in length. Total weight of the two fœtuses 4380.0 grammes. They are turned to one side so that it is possible to speak of front and back. There are slight differences in the lengths of the several extremities.

Head asymmetrical. One of them has a large encephalocele of the occiput. Labia majora in common. Sacrum is common from the second vertebræ downwards. Coccyx is single.

The right os ilium of one fœtus and the left of the other are connected, by cartilage above, by fibrous material below, so there is a common incisura ischiadica. The anatomical appearance at the autopsy is such that there probably was no adhesion and conglutination, but a primary formation of but a single sacrum and coccyx.

The sacs of the spinal dura mater of both fœtuses connect above the sacrum, and are single in the canalis sacralis. Inside there is but one cord.

In one fœtus the left umbilical artery did not come from the hypogastric, but directly from the aorta. The lower part of vena cava was double (through persistency of the vena cardinalis). As fœtus No. one had but one hypogastric artery, the right being absent, so fœtus No. two was without the left. Instead of them there was a large communicating vessel. Fœtus two had no umbilical vein. Thus circulation was, similarly to that in the acardiacus, established through the liver of one fœtus. Vulva in common, triangular. Labia minora united. One præputium and frenulum clitoridis. Clitoris not well developed. Two vaginæ; two hymena; two urethræ; two bladders; two uteri. One of the four kidneys is low down in the pelvis. Recta are double, but united immediately above the anus.

CASE XIII.—Marchand (*Beitr. z. pathol. Anat. u. allg. Pathol.*, xvii., p. 1, 1895. Quoted in *Schmidt's Jahrb.*, 1895, No. 6) reports a female pygopagus orn dead in the eighth lunar month, after version and difficult extraction, the heads, however, following with facility the extraction of the four upper extremities.

The mother had three previous confinements and one (four months) miscarriage. Union takes place in lower dorsal and pelvic region. The two fœtuses are turned to one side so as to present a common quasi anterior aspect. Fœtus one (left) is forty-seven cm. long, fœtus two (right) forty cm., and has a large occipital encephalocele. Their common weight is 4380 grammes.

There is a common placenta, 650 grammes, of a size twenty-three by eighteen cm. Cord is very thick, its insertion somewhat lateral, single to a distance of twenty-four cm., double afterwards. A branch of forty-five cm. supplies the smaller fœtus, the other of fifty cm., the larger one. Each of these branches has but two blood vessels, one artery and one vein. The two arteries join into one just before the insertion of the cord in the placenta. The coccyx and the larger portion of the sacrum, up to the second sacral vertebræ, are common to both fœtuses. There is union between the sacra, and the left os ilium of fœtus one and the right of fœtus two. The two other ossa ilium are moveably united at their posterior margins. This union is cartilaginous above, fibrous below. The lower part of the spinal dura mater is common. The lower part of the cord of fœtus one is arched and joins the smaller one of fœtus two, in this way it enters the sacral canal and forms the filum terminale. There is no actual cauda equina. The two sympathetic nerves join in the pelvis, at the juncture of the vertebral bodies, thus there is a common sympathetic innervation of the pelvic organs. There is a similar union of the vascular systems. The right termination of the aorta of fœtus one does not form an umbilical artery, but runs into the left terminal branch of the aorta of fœtus two. In the same way there is a direct connection between the two cardinal veins of both fœtus one and two. The two recta join below and have but one anal aperture, but a small incomplete fistula at the anterior margin of the united anterior labia suggests a second anus. Urinary and sexual organs are double, only the vestibule is single.

Autopsy on Dr. Tynberg's case, made under the supervision of Prof. H. Biggs:

The children died on September 11th, 1895, the left child dying eight hours before the right.

Left child—The abdominal cavity was considerably distended, post-mortem discoloration being more marked than in the right. Both children were markedly emaciated, with considerable abrasions around the external genitals. The length of the left child was 48 centimetres; that of the right 50 centimetres. The large intestines, especially the transverse colon, were found markedly distended. From three to four drachms of clear, straw-colored fluid escaped from the abdominal cavity. The mesentery of the transverse colon was relatively very long. The liver extended slightly below free border of ribs and occupied whole of concavity of diaphragm of both sides, the larger mass being on the left side; the suspensory and round ligaments were situated about one centimetre to left of median line and extended to right and upward of diaphragm. The diaphragm was in the fifth intercostal space of right, and sixth of left side. The stomach lay beneath and in front of the large left lobe. It was very small. The mesentery of calcum was unusually long and free and the sigmoid flexure large. Abdominal organs were otherwise normal in position and character. Uterus, ovaries, bladder and rectum appeared normal from abdominal aspect.

Right child—Stomach and liver normal. Large intestine somewhat distended; omentum long; liver extending to free border of ribs. Stomach markedly greater than in left child. Pelvic organs normal in position and character. Between the pelvic cavities there was only fascia and peritoneum; the lower ends of dura mater spinalis communicated, both being very much dilated; the spinal cords *not* fused. The bond of union was at lateral masses of sacrum, the latter being unusually developed. It was ligamentous and cartilagenous in character and easily cut through. Dura mater sacs communicated through a space corresponding to the opening in the sacral canal. External genitals could be separated without injury to either.

Each child had its own complete generative organs, and each its distinct circulatory apparatus. The anus was common to both, but was largely situated in the right child. About one-half centimetre above the anus was a well-developed antero-posterior septum, also more closely identified with the right child, and thick enough to form a perfectly normal rectum for each. The cords did not communicate. The cord of the left child was normal; that of the right extended into the sacral canal.

THREE CASES OF PURULENT OTITIS MEDIA.*

BY WILLIAM F. LOCKWOOD, M.D.,

Baltimore.

According to the diagnosis made in the three cases herein alluded to, each represented a somewhat different condition, but all proved alike perplexing and progressed to a fatal termination. Middle ear disease caused in one *meningitis*, in another meningitis with *thrombosis of the lateral sinus*, and in the third *ulcerative endocarditis*, with thrombosis and *general septic infection.* Their history and course are briefly as follows:

CASE I.--C. S., white, age nineteen months, was first visited on January 21st, 1892. There had been no previous sickness, except a slight bronchitis some weeks before, and a discharge from the right ear, which had lasted three weeks. This was profuse and rather offensive, but was apparently controlled by local treatment. A few days later there were fever, violent pain in the region of the ear, rolling of the head, rigidity of the neck muscles, half closed lids, dulness, coma, and death on January 28th, one week from the time of the first visit.

There had been no marked vomiting, but an unusual flow of saliva at the beginning of the serious symptoms; no mastoid swelling; no swelling about the neck.

CASE II.—M. O'B., white, female, aged nineteen years, had occasional discharge from left ear since childhood, but was otherwise well until May 29th, when earache began and continued until June 5th. There was during this time violent frontal and occipital headache, the pain extending along the cervical spine, vomiting for three days, and a chill every morning about six o'clock, described by her mother as "nervous."

At the time of the first visit, the temperature was 102° F., the pulse 140. There was profuse sweating. The tongue was coated—brownish in centre. Her manner was nervous and expression anxious. She complained of giddiness; there was no tenderness about the ear, and no discharge. A diagnosis of meningitis was made (or possibly typhoid fever).

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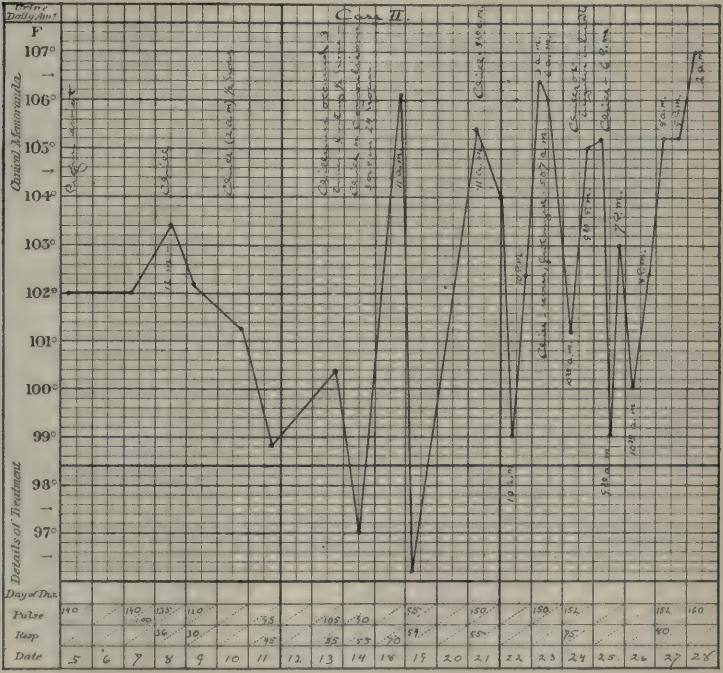
* Read before the American Pediatric Society, Virginia Hot Springs, May 27, 1895.

6th. Discharge from left ear; vomiting frequent; headache less.

7th. Headache, delirium at night; vomiting whatever is taken; stiffness of neck muscles and disinclination to move them; sweating.

8th. Chill shortly before visit at 12 M.; tremulousness, pain in back; less headache; slight cough. (For temperature record see chart.)



9th. Nose bled a few drops this morning; four loose actions in the twenty-four hours; ear discharging freely a watery offensive fluid.

10th. Has vomited once only and craves food; chill at 2 A.M., with no sweat; headache less; no discharge; apparently slight strabismus.

11th. Stiffness of neck and back; wakeful at night; vomited once; no tympanites or abdominal tenderness.

13th. Vomited twice; three loose actions, accompanied by chilliness; pain in ear, with swelling and soreness of neck on corresponding side; no discharge.

14th. Restless at night; slept three hours this morning; looks and feels better; neck swollen and tender, without heat or redness; no vomiting. The later "chills" seem to have been convulsions—rigidity of extremities alternating with general muscular twitchings; screams at beginning of chill, and drops off to sleep afterwards.

From 14th to 18th, occasional pain in ear and head; no discharge; temperature variable, reached 105° F. once in the evening.

18th. Headache; has vomited everything taken since morning.

19th. Passed a better night; slight nose bleed; no headache or pain.

21st. Chill at 5.30 A.M.; several loose actions; vomiting frequent and constant thirst; has pain in left side; no pericardial or pleural sound; no effusion; slight pain in ear.

22d. Bright, and claims to be feeling better.

23d. Has had several chills, one prolonged and severe; is delirious and kept in bed with difficulty, vomiting frequent.

24th. Mind wandering; sleeping most of the day; in absence of attendant walked into the adjoining room; several stools, not loose, but very dark; chills at irregular intervals; feet are swollen, particularly the left.

25th. Chill about 6 P.M.; nose bled during forenoon; retains whiskey and nourishment; expresses anxiety about her condition.

28th., 2 A.M. Temperature 107° F.; pulse 160; (intermittent); pain in swelling on side of neck. Died at 6 A.M.

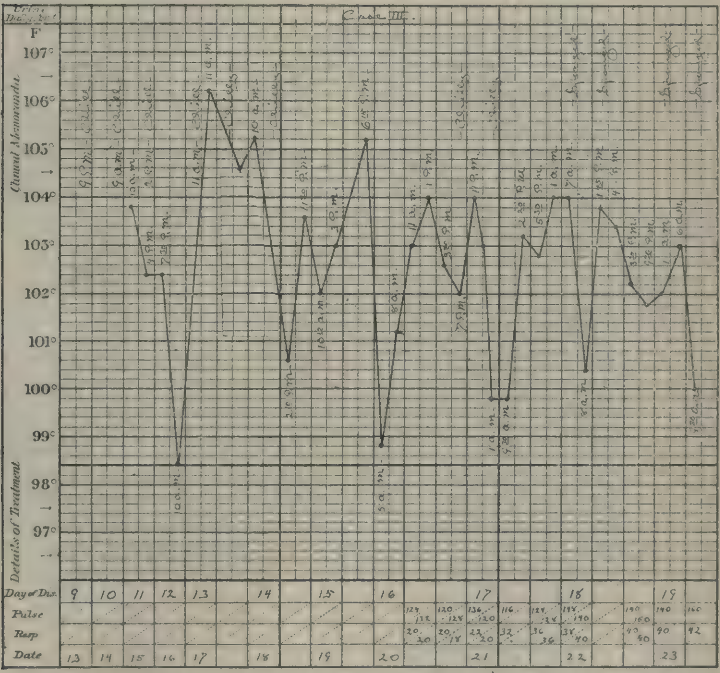
CASE III.—A. B., aged fifteen years, had a chronic discharge from the left ear and slight deafness, following scarlet fever, at the age of six years. A chronic endocarditis, with hypertrophy, dated from the same illness, but had caused no serious inconvenience. There had been occasional attacks of earache, accompanied by increase of the discharge, which had usually yielded promptly to domestic remedies. He was treated for adenoids of the naso-pharynx and enlarged tonsils in the spring of 1894, with apparent benefit to his general health.

November 28th, 1894, an attack of earache occurred, was relieved, and he returned to school on December

3d and 4th. Two days later there was a return of the earache, and he was visited for the first time December 7th.

At that time there was fever and pain in the ear. No other local symptoms, except free aural discharge. These subsided in a few days, and did not return, though the temperature varied slightly and continued a little above normal.

December 13th, there was a chill with decided rise of fever, and from that time the course of the illness was typical of general septic infection, starting from an acute endocarditis engrafted upon the already diseased aortic valves, and leading to infarctions of the spleen and other organs.



The accompanying chart shows plainly enough the character of the case, and further details are omitted, except to quote from the autopsy notes furnished by Dr. Flexner as follows:

"The cultures made at the time of the autopsy from the muco-pus in the middle ear and from the pus in the peritoneal cavity gave a growth of pure streptococci. * * * * Cultures were made from the vegetations on the aortic valve, from the liver, infarctions in the spleen and kidneys and from the lungs. In *all* instances, a growth of pure streptococci was obtained.

"Cover slip preparations made from the thrombus on the aortic valve gave a colossal number of streptococci, and no other organism could be detected upon them or in the cultures. Cover slips from the spleen and kidney also showed only streptococci, but they were not so numerous in these preparations as in those from the thrombus mass.

"The case becomes therefore quite clear; the suppurative otitis media doubtless was the primary disease, and in this connection I would like to say that the medullary portion of the petrous portion of the temporal bone looked infiltrated, although until I have completed the microscopical examination, I should not like to commit myself finally on that point.

"From this point out the infection of the aortic valve (already the seat of a chronic endocarditis) took place, then septic emboli were carried hence to the spleen, giving rise to a large infected infarction, which, extending to the capsule, infected the peritoneal cavity, causing a general peritonitis, and others carried to the renal artery caused septic infarctions of the kidney. Finally a general infection of the body with streptococci took place.

"The anatomical diagnosis is as follows:

"Suppurative otitis media (due to streptococcus pyogenes);

"Chronic endocarditis of aortic valve, heart hypertrophy;

"Acute ulcerative endocarditis of aortic valve (due to the streptococcus pyogenes);

"Septic infarctions of the spleen, followed by acute general fibrino-purulent peritonitis;

"Septic infarctions of the kidneys;

"General infection with streptococci."

I have made a short report of these three cases, not that they are unusual, but because they are repeatedly met with, and because the general practitioner is peculiarly helpless in dealing with them. While a large majority of the cases of acute otitis media with perforation heal promptly, Case No. I serves to show that the condition is serious enough to demand painstaking care. Case No. II exemplifies the danger, which may result from a *long standing* aural discharge. I have gone over this case in detail to illustrate the difficulties, which may be encountered in making the diagnosis accurate enough to justify operation. The suggestive symptom in this connection was the swelling in the jugular region pointing to thrombosis of the lateral sinus. However, an aural surgeon and also a general surgeon, who saw the case in consultation, did not advise surgical interference.

The third case, the only one in which an autopsy was obtained, shows the peculiar danger to which a patient may be exposed, who, with a chronic aural discharge, has also diseased heart valves. The post-mortem examination in this case showed conclusively, that from the time of the first chill no operation whatever would have availed to save the life of the patient.

Dr. Gorham Bacon, of New York, reports one case of pyemia following acute suppurative otitis (*Trans. Amer. Otological Society*, Vol. iii., Part iv.) in a young man, aged twenty-three, who recovered. Zaufal (of Prague) has shown that the presence of streptococcus pyogenes in the secretions from an inflamed middle ear is of great importance in regard to prognosis, since it has been frequently noticed in the very serious cases of middle-ear inflammation. ("Burnett's System of Diseases of the Ear," 1893.)

Without presuming to cross the line, which separates the general practitioner from the specialist, it seems proper for me to say, as a result of my limited experience and observation, that in the matter of treatment, cases of chronic otitis media receive, as a rule, less careful attention than they should.

Inflation, cleansing, antiseptic powders and fluids are all recommended, but are not as thoroughly applied, in general practice, as might be. The conduct of the case is too often left to nurses or parents, and dirty syringes and instruments have doubtless contributed their share of fatal cases.

As in other maladies which occupy the border land between the domains of medicine and surgery, the careful physician will do well when danger threatens to seek early an ally in the surgeon.

DISCUSSION.

Dr. Caillé inquired, if there were any symptoms of localized abscess anywhere, to which Dr. Lockwood replied that there were not.

Dr. Caillé said, that he wished to draw attention to the new method of making a diagnosis between meningitis and localized abscess, by tapping the vertebral canal. In cases of meningitis the cerebro-spinal fluid would be found turbid, while in abscess it was usually clear.

◆

Limited School Quarantine for Infectious Diseases—The following scale of school detention of scholars and teachers has been adopted by the Pennsylvania State Board of Health. The recommended time of quarantine, for persons who have been exposed to the infective diseases, after which those persons may safely be admitted again to schools, if they continue in good health and have taken proper measures for disinfection: for diphtheria after twelve days; small-pox, eighteen; measles, eighteen; chicken-pox, eighteen; mumps, twenty-four; whooping-cough, twenty-one. Adults may be admitted at once, if they disinfect their clothes and persons.—*Journal Am. Med. Association.*

Dr. A. Brothers, of New York, has received the award of the William F. Jenks memorial prize of five hundred dollars, under the deed of trust of Mrs. William F. Jenks, for the best essay on "Infant Mortality During Labor, and Its Prevention."

AMNESIC APHASIA—SCARLATINA ANGINOSA PNEUMONIA CROUPOSA.*

BY SAMUEL S. ADAMS, M.D.
Washington, D. C.

Jesse S., male, mulatto, aged three years, was admitted to the Children's Hospital, D. C., October 9, 1894.

His family history does not point to any hereditary disease, and he never had any of the diseases of infancy. Yesterday he fell from a porch to the ground—a distance of twenty feet—striking the top of his head, which rendered him unconscious for twenty minutes. Nothing developed until night, when he vomited blood seven or eight times. Prior to the accident, he talked rather better than a child of his age, and walked, romped, and ran as well as could have been expected.

Present Condition—His expression is vacant, there is no irregularity of the pupils, and he cannot, or will not, talk or answer questions. There is neither contusion nor abrasion of the scalp, nor anything about the body to indicate the point receiving the blow. He suffers if the right shoulder is manipulated. He is unable to stand or bear any weight upon his legs, but voluntary and reflex movements are normal, and the facial muscles are all right.

October 15th, patient transferred from the surgical ward to my service. There has been no improvement since his admission, and his condition is as described above. He has not vomited since he entered. A slight right facial paralysis is detected only when he smiles. A careful physical examination again fails to reveal any external injury. He can move his legs at will, and the reflexes are normal, but he cannot stand alone. There is no tenderness over the spine. He cries out at times as if from fright. The pulse, respiration, and temperature have remained normal. Every word or question put to him is repeated with astonishing rapidity and pre-

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*Read before the American Pediatric Society, Virginia Hot Springs, May 2[illegible] 1895.

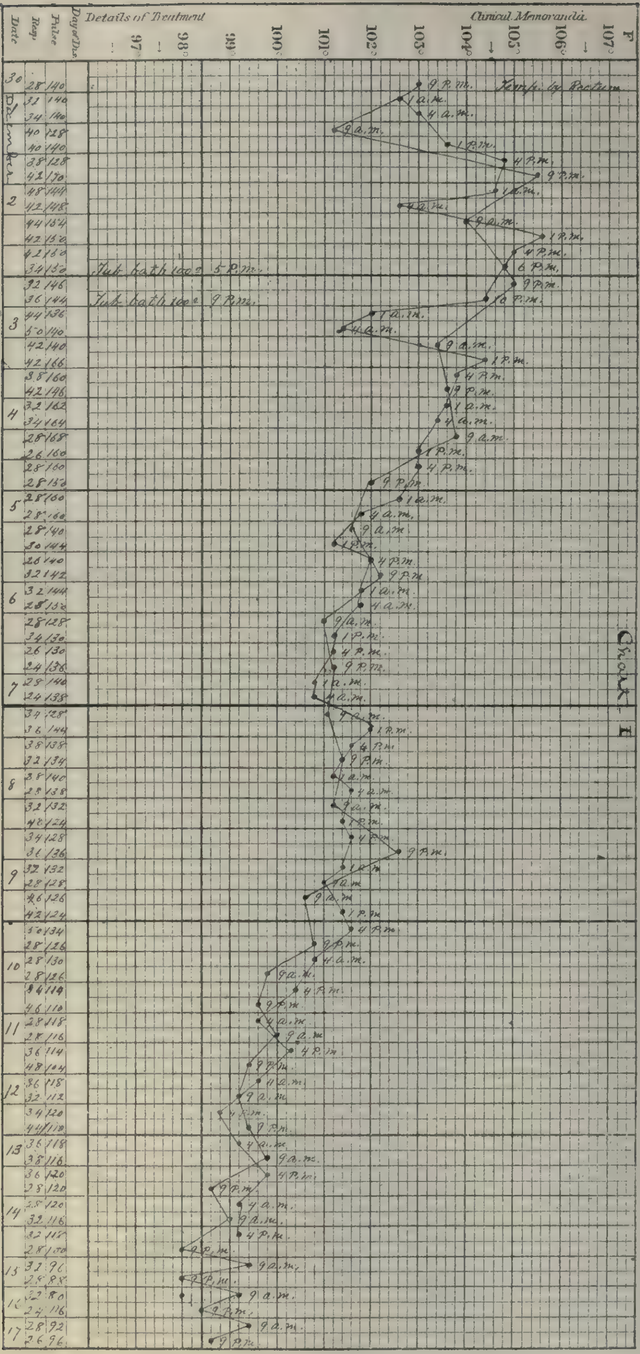
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Chart I

cision, and there is no difficulty in articulation, but he seems conscious of the fact that his answer is not what is wanted, because he smiles when he gives it, although he never attempts to correct the error. For instance, to the question, "Is your name Billy Buster?" he begins his response almost simultaneously with the utterance of the last word, and with the same speed, modulation, and intonation says: "Is your name Billy Buster?" Just so with "Who is this?" "Have some ice cream?" and many other similar phrases. Repeated efforts fail to elicit an accurate reply. The house staff and nurses in like manner failed.

November 8th, his general health has improved and he seldom cries out, as previously noted. His mind is clear, but he still repeats all questions promptly and distinctly, without giving an intelligent answer. The facial paralysis has disappeared. He loses his equilibrium if he attempts to stand alone without holding to some object.

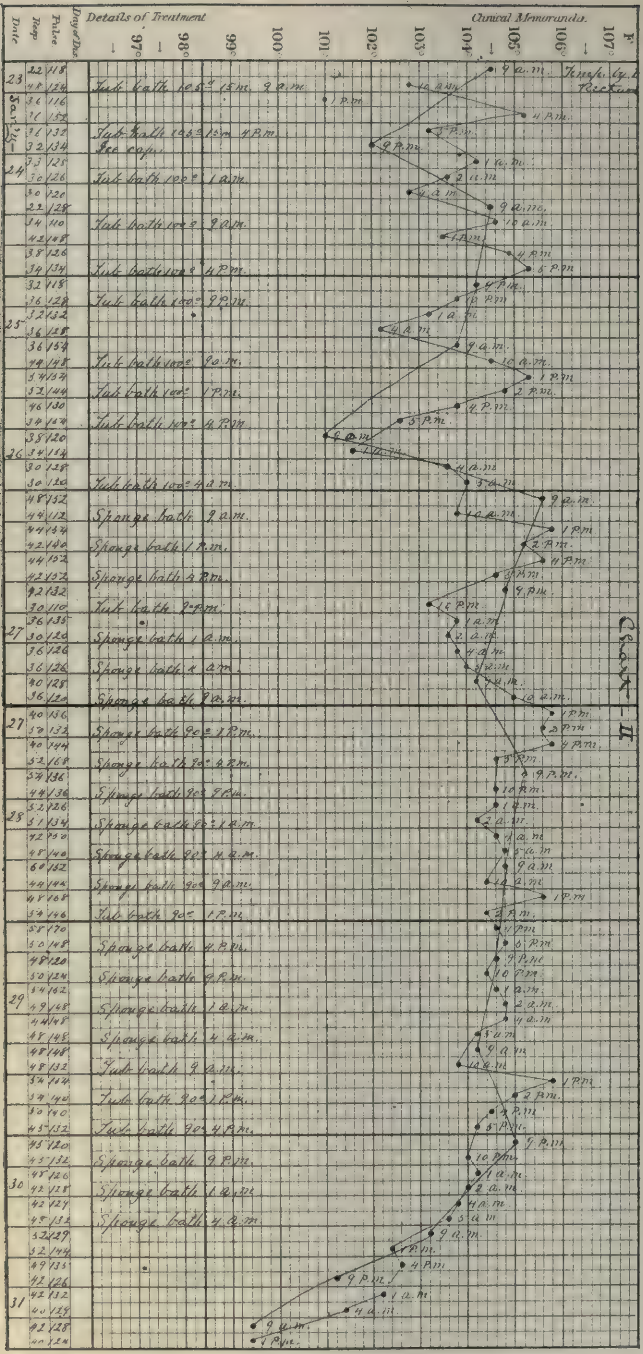
Although, as we have seen, it has been impossible to find any external wound, nevertheless there was certainly every indication of an intra-cranial lesion.

He was kept under observation from this time, and efforts were made at each of my visits to detect any signs of improvement.

Scarlatina Anginosa—November 30, 1894, no material change had been noticed in his condition until last night, when he was taken with nausea, vomiting, and high fever. This morning, the tonsils, palate, and pharynx are highly congested, and there is a scarlet rash over the anterior part of his chest. At my visit, I diagnosticated scarlet fever, and had him immediately removed to the *isolating ward.*

December 1.—Vomited twice during the day, and was very restless; dyspnœa. Temperature, 105.5°. Rash marked on the chest and inner side of thighs. Given hot mustard bath and three grains of phenacetin in six doses. (See Chart 1.)

December 2.—Throat very sore, and deglutition diffi-



Date	Resp	Pulse	Day of Dis.	Details of Treatment
23	22	118		
	48	124		Tub bath 105° 15m. 9 a.m.
Jan'y 24–	36	116		
	21	152		
	36	132		Tub bath 105° 15m 4 P.m.
	32	134		Ice cap.
24	33	125		
	30	126		Tub bath 100° 1 a.m.
	30	120		
	22	128		
	34	140		Tub bath 100° 9 a.m.
	42	148		
	38	126		
	34	134		Tub bath 100° 4 P.m.
	32	118		
	36	128		Tub bath 100° 9 P.m.
25	32	132		
	36	128		
	36	154		
	44	148		Tub bath 100° 9 a.m.
	34	154		
	32	144		Tub bath 100° 1 P.m.
	46	130		
	34	164		Tub bath 100° 4 P.m.
	38	120		
26	34	154		
	30	128		
	30	120		Tub bath 100° 4 a.m.
	48	152		
	44	112		Sponge bath 9 a.m.
	44	154		
	42	140		Sponge bath 1 P.m.
	44	152		
	42	152		Sponge bath 4 P.m.
	42	132		
	30	110		Tub bath 9 P.m.
27	36	135		
	30	120		Sponge bath 1 a.m.
	36	126		
	36	126		Sponge bath 4 a.m.
	40	128		
	36	120		Sponge bath 9 a.m.
27	40	136		
	50	132		Sponge bath 90° 1 P.m.
	40	144		
	52	168		Sponge bath 90° 4 P.m.
	54	136		
	44	136		Sponge bath 90° 9 P.m.
28	52	126		
	51	134		Sponge bath 90° 1 a.m.
	42	150		
	48	140		Sponge bath 90° 4 a.m.
	60	132		
	44	144		Sponge bath 90° 9 a.m.
	48	168		
	54	146		Tub bath 90° 1 P.m.
	58	170		
	50	148		Sponge bath 4 P.m.
	48	120		
	50	124		Sponge bath 9 P.m.
29	54	162		
	49	148		Sponge bath 1 a.m.
	44	148		
	48	148		Sponge bath 4 a.m.
	48	148		
	48	132		Tub bath 9 a.m.
	54	164		
	54	140		Tub bath 90° 1 P.m.
	50	140		
	45	132		Tub bath 90° 4 P.m.
	45	120		
	45	132		Sponge bath 9 P.m.
30	48	126		
	42	128		Sponge bath 1 a.m.
	42	124		
	48	132		Sponge bath 4 a.m.
	52	129		
	32	144		
	49	135		
	42	126		
31	42	132		
	40	124		
	42	128		
	40	124		

cult. Characteristic eruption diffused over body, being very intense on palms and soles, Restless, nervous, and breathing stertorously. No lung complication. Urine normal. Convulsion at 5 P. M., when he was placed in a bath at 100° F. for ten minutes; a second convulsion at 9 P.M., and the same treatment was given. As he vomited a round worm during the day, he was given fluid extract of senna and spigelia.

December 3.—Nervous symptoms not so marked as yesterday. Breathing easier. Urine normal. Appetite better. Drowsy most of the day. No twitchings.

December 4.—Eruption continues about the same. Restless, and tossed about as if in pain. Lies in a stupor, with teeth clinched. Later in the day, he showed more signs of consciousness.

At 7 P. M., not having passed urine for twelve hours, hot fomentations were applied to the hypogastrium for an hour, without benefit. Four ounces of normal urine were drawn by catheter. In eight hours, was again catheterized, and two and one-half ounces of normal urine were withdrawn. Poultices were now applied over the kidneys.

December 5.—Rash now becoming paler; cries out as if in pain; mind clear; talks a little. It is to be noted that this is the first time he has spoken, except parrot-like, since his admission. He voided urine, or was catheterized, during the day, and. seventeen ounces of normal urine were passed during twenty-four hours.

December 6.—From this time, convalescence was undisturbed; desquamation was profuse, and he was returned to the general ward January 10, 1895.

Pneumonia Crouposa—January 23, 1895—Patient has gotten along well until this morning, when he had a severe general convulsion at 8 o'clock. Pulse, 118; respiration, 22; temperature, 104.5° F. Hot-water bath given. Had two more convulsions, for which baths were given. He seemed so nervous that an ice cap was applied to head.

January 24.—Had a comfortable night. Abdomen greatly distended, and tender to touch. Respirations are rapid, but a careful examination fails to discover any intra-thoracic disease.

January 25.—Abdomen very much distended, and he cries out if attempts are made to straighten his legs. Turpentine stupes ordered.

The signs of croupous pneumonia appeared, and the crisis occurred January 30, the ninth day. The entire right lung was involved. The treatment consisted of stimulants and cold externally.

It seems rather remarkable that a child three years old should be able to pass through two diseases and recover so quickly while still carrying a crippled brain.

February 10.—He talks rationally, but repeats at times. He now asks for food.

February 20.—Talks better, and seldom repeats. Walks, but loses his balance frequently.

April 7.—Discharged cured.

1 DUPONT CIRCLE.

Death from Starvation in Children—Seydel points out that the appearances found after death from starvation of young children, such as emptiness and contraction of the stomach and intestines, and general wasting, are not sufficiently characteristic that a decision can be based upon them in medico-legal cases. It is also possible that, for example, children might be fed immediately before death, or that the direct cause of death might be perhaps suffocation. From repeated examinations, Seydel found that in true cases of insufficient nutrition, there is great atrophy of the thymus gland; he allows, that atrophy of the thymus also occurs in other wasting conditions, but thinks that the condition, combined with considerable emaciation and unaccompanied by organic disease of other parts, is a sure sign of wasting from insufficient and improper feeding.—*British Medical Journal.*

A DISCUSSION ON THE CHARACTERISTIC FEATURES OF THE RECENT EPIDEMIC OF GRIPPE, 1894-1895.

Dr. L. Emmett Holt: The cases I shall speak of began with symptoms of great severity, the temperature running very high during the first twenty-four hours, being in one case 107.4°; in the other, 106.8°; and the cerebral symptoms being intense. The first patient was a baby five months old, previously healthy, artificially fed. When first seen, the temperature was 104°. Fine râles could be heard throughout the right lung. In a few hours, the temperature had risen to 106.8°, and there was spasmodic twitching of the muscles. A cold bath was given, and the temperature fell to normal and did not rise again, the patient going on to perfect recovery.

The second patient was a baby of four months, and was perfectly well up to the time of the attack. It was taken in the afternoon with convulsions, which were repeated in the early evening and again at midnight. The temperature then was 107.4°, and the child was almost in *extremis*. Cold baths brought the temperature down to normal, but it immediately rose again to 105°. Baths were then given at intervals of a few hours, and temperature remained at 101°. The earliest physical signs in the chest were those of commencing pneumonia, but the signs entirely cleared up at the end of thirty-six hours. The temperature remained at 101° for four days; on the fifth day, convulsions came on again, and the temperature went to 106°, and from that time it ran the typical course of pneumonia. The crisis came after six days, and the case went on to convalescence. This child was kept alive for three weeks by gavage, four ounces of food being given at intervals of four hours. It was regurgitated only once or twice. A third attack came on, but without convulsions, and lasted only two or three days. The child made a perfect recovery. The interesting features about these cases were the high temperature, the intense cerebral symptoms, and the resemblance to pneumonia.

Dr. J. P. Crozer Griffith: The following cases illustrate the multiform character which influenza may take in children. The adults were unmistakable cases of the disease. The children would hardly have been considered so were it not for the fact that they partook in a distant house-epidemic affection—seven individuals in all. There was no sudden change in the weather or other cause to which the illness could be attributed:

Grippe in the family of Mrs. C. F.—1. C. F., aged seven years, on night of March 4th, had high fever and ached through the body; there was slight sore throat; the eyes were red. In the morning of the 5th, he was still very hot, but made no complaint. His throat was slightly red, and he had some cough.

2. Susan D., nurse, March 6th, 1895, was attacked by severe headache and general and quite characteristic aching, with considerable prostration. She was better on the 7th, under antipyrine and quinine, but the aching returned on the 8th, after the medicine was stopped, and it was renewed.

3. Joanna W., nurse, March 6th, 1895, in the afternoon, was attacked by intense aching all over the body, including the head. This lasted through the night, and until the morning of the 7th, when the face was much flushed, but there was no elevation of temperature. There was no sore throat. There was slight cough; the flesh was tender, but there was no involvement of the joints. Antipyrine and salol were given. By the 8th, she was much better, but felt weak: on the 9th, the aching was entirely gone, but she was still weak.

4. Margaret F., fourteen months old, on March 7th, was feverish and cross through the night. The throat was swollen and red. Examination of the lungs was negative. 8th, voice croupy when she cries. Râles heard in the chest. 9th, much better. 11th, has a cold in the head.

5. Bertha W., nurse, March 7th, ached all over, and felt scarcely able to be about. Better on the 8th, but not well.

6. Natalie F., nine years, on March 7th, croupy; on the 9th and 10th, still croupy.

7. Caleb F., three and one-half years, on March 10, grew very croupy in night; was oppressed all day on the 10th until evening; was better in the night, but the voice was still hoarse on the 11th.

Dr. J. Henry Fruitnight: I wish to speak of the aural complications. Some of my cases developed intense congestion of the throat, with extension to the ear by the Eustachian tube. The attacks would begin with high temperatures and pain in the ear; the drum would be intensely injected, and in about twelve hours there would be a discharge of blood from the ear. Soon there would be amelioration of the pain; deafness would last for a short time only, and in three weeks the hearing would be normal.

Dr. John Dorning: I wish to present a temperature chart of an unusual case. A child twenty months old was taken ill on the 27th of April with a temperature of 106°, and I suspected pneumonia, although the physical signs were not clear. On the second day, the temperature fell. On the fifth day, had a marked remission. On the third day, there were evidences of beginning consolidation on the right side posteriorly. On the fifteenth day, a decided crisis occurred, but on the sixteenth there was an exacerbation, another, followed on the nineteenth by a crisis. Again the temperature went up, and on the twenty-third day a final crisis occurred. The child about the fifth day seemed to show a little uneasiness on the right side of the head, and examination showed acute otitis media. The drum ruptured and a discharge followed. Four days later, the other ear discharged without any preceding pain. The most interesting feature was the action of the temperature. For some days I used the cold pack, and the temperature would fall three or four degrees, but finally its greatest effect was a reduction of only one and a half degrees. I then tried sprinkling, which acted favorably for a time, but I was finally obliged to use the ice pack to the radial arteries.

Dr. F. Gordon Morrill: Dr. Blackader spoke in his remarks of a preparatory crisis, as it were. I think that is a common feature of the pneumonia of childhood.

Dr. Blackader: We all recognize the preparatory drop of temperature in pneumonia, but I have never before seen the same character of crisis as I described in my paper.

Dr. A. Seibert: When I am called to see a child with a sudden rise of temperature in the afternoon or evening, and symptoms apparently referable to the lungs, I make it a point to wait until morning, and if the temperature is 100° or below, I call it influenza. As to the treatment of these enormously high temperatures that Dr. Holt reported, I would like to call attention to something I suggested several years ago, that is, the introduction of a fairly large dose of antipyrine in solution into the rectum. It relieves the muscular tension and the hyperæmia of the brain promptly, and nothing will do it better. My custom is to give one dose at once, and if the temperature is likely to be high for the next few days, to order more injections. Later on, when the temperature does not run very high, and there is evidence of bronchitis, hot mustard foot-baths and large doses of quinine are efficacious. Recently I have used the bisulphate of quinine; it does not irritate the mucous membrane, and is as well retained as antipyrine.

Dr. Holt: One point which I forgot to mention was the occurrence of a cough which resembled pertussis. In regard to the matter of isolation and fumigation, I think we have been too remiss. It is one of the most contagious of diseases, and we ought to insist on isolation just as we do in scarlet fever or measles. In some of my cases it has been difficult to stop the disease until fumigation was practised or the patient was sent away. After cases of influenza, we should insist on fumigation and thorough cleaning of the room.

Dr. Blackader: I, too, intended to speak of the cough resembling pertussis. As to fumigation, I agree entirely with Dr. Holt.

Dr. Seibert: Dr. Pruden, in a paper published in the *American Journal of Medical Sciences*, says that sulphur fumigations are absolutely without value.

Dr. Holt: He is speaking then of dry fumes, and says in the same article that if moist fumes are used, they are extremely efficient in killing microbes.

Dr. Augustus Caillé: I think it is pretty well established that sulphur fumigation is a farce, even in the presence of steam. At the hospital, we rely upon ventilation for some time, and washing of the walls and floors with a solution of bichloride.

Dr. E. M. Buckingham: At the present time, the method of disinfecting rooms in the larger number of hospitals in the world is the washing of the walls and floors with bichloride or carbolic acid solutions.

Dr. W. C. Woodward: In Washington, for the past six months, we have relied altogether upon sulphur in scarlet fever, and have had no recurrences.

Dr. Blackader: I hardly think it is right for us to give up sulphur fumigations altogether when clinical experience teaches most of us, that it is not as ineffectual as stated. How seldom after its use do we have recurrences? Surely that would happen oftener if it were valueless. In the absence of anything better, sulphur, with as complete washing of the rooms as we can get, is, I think, something to still cling to.

EPIDEMIC INFLUENZA, 1889 TO 1895.

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So thorough has been the study of influenza during the past century and a half, and so many have been the monographs and volumes written, that it seems presumptious to add to the list.

To this generation of practitioners the disease was only a matter of history until 1889. Since that winter we have seen the spread of the scourge five times, and may now draw lessons from personal experience.

Etiology and History—The early epidemics were widespread, usually following the passage of armies or pilgrims. The cause was looked for in sudden changes of temperature or of the winds, occurrence of earthquakes and comets. A little before the middle of this century, it was believed that a specific material cause existed, and "influences" were therefore discredited. Volcanic dust and vegetable spores gave place to the theory of a germ. Pfeiffer and Canon (1892) independently demonstrated such a germ; the one in bronchial secretions, the other in the blood of influenza subjects. The bacillus is the smallest yet discovered, but develops characteristic drop-like colonies on glycerin-agar. It was not found in those not suffering with influenza. Inoculations gave positive results in apes and rabbits, so that we may safely say the case is proven. Many observers have found streptococci, staphyloccocci, and the diplococcus of pneumonia, showing that the circumstances adapted to one are congenial to the other.

The telluric and atmospheric influences which absorbed attention one hundred years ago, should not be dismissed with derision, for we may now study them in reference to the development and spread of the germ. For this purpose, I have arranged a table showing a number of cases observed during each month of each epidemic, with the temperature, humidity, and barometric pressure for the time, and also for the months preceding and following:

TABLE SHOWING RELATION OF ATMOSPHERIC CONDITIONS TO PREVALENCE OF INFLUENZA.

MONTH AND YEAR.	Number of cases.	Average temperature.	Humidity—per cent.	Barometer.	REMARKS.
1889—					
November.......	...	46	75	30.08	During Jan'y there were 264 deaths from influenza in New York city. Total deaths Jan'y, 2,299, against 1,014 in previous yrs.
December	65	41	78	30.17	
1890—					
January	103	40	70	30.22	
February	...	40	76	30.12	
1891—					
February	...	38	77	30.00	
March	51	38	73	30 10	
April..	133	52	69	30.00	507 deaths from influenza in April.
May............	42	60	67	30.03	
June	...	70	72	29.96	
December	29	42	74	30.17	A few cases were reported during the spring and summer of 1892.
1892—					
January	10	30	76	30.05	
February	...	33	74	30.14	
1893—					
November	...	44	74	30.12	
December	36	35	74	30.14	
1894—					
January	15	34	78	30.17	
February	18	29	75	30.16	
March..........	2	44	72	30.11	
April...........	...	49	73	30.04	
May	3	60	74	29.97	
June	...	70	70	30.00	
December.......	1	36	73	30.14	
1895—					
January.........	159	30	77	30.07	
February	21	25	68	29.96	
March..........	16	36	67	30 01	
April	8	..	..	.....	

From this table it will be seen that in 1890 the greatest number of cases occurred in a temperature of 40° and humidity of 70 per cent. In April, 1891, the temperature was higher, viz., 52°, but the humidity lower, *i. e.*, 69 per cent. In January, 1895, the extremes were still more marked, temperature only 30°, while the humidity reached 77 per cent. It appears, therefore, that the bacillus flourishes under many conditions; history, too, tells us that the disease has prevailed in all climes, seasons and altitudes.

The relation of humidity to death-rate is, however, to be viewed from a different standpoint. In all epidemics, as at other times, it is difficult for the normal body heat and the pulse to be maintained when radiation is so interfered with. Influenza is extremely enervating and debilitating, and many persons succumb from no apparent complication other than increasing humidity of the atmosphere.

My notes include 732 cases, of which 258 were children. As about one-third of the cases are in the young, it seems that tender age does not afford immunity, nor is the disease one peculiar to childhood.

Age, Sex, and Condition—Influenza is no respecter of persons, and attacks the foundlings on Randall's Island to-day as it did the great George Washington a hundred years ago.

My youngest case was two months old, but other observers report earlier, a congenital case being recorded by Dr. Townsend. Thirteen of the cases were under one year of age. Since 1889 we have witnessed the spread of five epidemics, although the cases of 1892 and 1893 were very few.

Contagion and Incubation—The contagion is virile, and spreads so rapidly that entire families, households, and institutions are overwhelmed almost at once. I am informed that in 1889–90 the influenza atttacked seventy-five per cent. of the 300 inmates of Randall's Island Infant Hospital. In one ward of thirty-two patients, none escaped. Two of these died of broncho-pneumonia.

During the same epidemic no cases occurred in the Home for Aged Women, but in the following year half of the inmates were affected.

The disease was brought in by a woman who returned sick after a visit outside. In this house epidemic the incubation period was only twenty-four hours.

Among the cases are noted thirty-four family groups of three or more members. In some instances the development could be watched, one case following twelve or twenty-four hours after another, but, as a rule, extension was so rapid as to thwart tracing communication.

There are numerous records of the first case in different localities. In 1889 our first cases occurred on December 18th. On January 6th, two weeks later, it appeared in California. Not until February 11th did it appear at the Soldiers' Home, in Grand Island, Neb. This is the geographical centre of the United States, yet the disease did not take hold here until after the large cities, having free communication, were infected. If spread by winds alone, all towns would be infected alike, without regard to size or activity.

This illustrates well the spread of the disease by contact or contagion from one city to another, and how the germs are carried by persons to places before free from disease. The influenza had a grip on the entire breadth of the Union in fourteen days. One hundred years ago the territory could not have been covered in as many weeks.

Facilities for travel regulate the spread of influenza. The epidemic of 1803 covered Great Britain in four months, and remained six weeks in a place. The 1889–90 epidemic lasted six weeks here, but that of 1891 continued eight weeks. In 1894 the unwelcome guest tarried three or four months before it was entirely lost.

The siege of 1895 began sharply in January and dwindled away in April. The late cases in each of these epidemics, the aftermath we may say, were mild, and shorter in duration than those that occurred early. This may be due to the fact that susceptible persons succumb early, or that the contagion is attenuated and less virulent toward the end of the epidemic. All epidemics have this characteristic.

Symptoms—The poison of influenza interferes with the functions of many organs of the body, and so gives rise to a great variety of symptoms. In the majority of cases the leading symptoms are referable to the *respiratory*, the *nervous*, or the *digestive* system. We may, therefore, consider the cases in three classes, or as of three types. The disease is primarily a catarrh, and hence sneezing, coryza, and irritation of the throat are early symptoms. The trouble may be more severe in some parts than others, so as to result in exudative tonsillitis in one case, while the next may have marked laryngitis. Suppurative tonsillitis occurs sometimes. There is a universal congestion of mucous membranes, and consequent cough. Soon secretion is active, and general bronchitis results. In weak persons, at the extremes of life, the abundant secretion caused pulmonary collapse after coughing, and thus starts capillary bronchitis, which is properly lobular pneumonia.

Acute croupous pneumonia occurred but a very few times, so that I look upon it as a coincidence. Many had small areas of consolidation, mild pneumonias, and usually recovered. In a few instances general pneumonia seemed to have begun, but subsided after the congestive stage. Many children in my dispensary district are flat-chested, and have more or less fibroid induration of the lungs. In most instances these children overcame the disease. A few, with bad heredity and hygiene combined, seemed to become subjects of chronic bronchitis. One or two tuberculous adults dated their illness from an attack of influenza. We know that many germs are always about, and it would be strange if the tubercle bacilli did not locate in some of these weakened lungs. Dyspœna is partly due to nerve prostration, and may be severe when there is little obstruction in the lungs.

Pleurisy was of rare occurrence, as shown by physical signs. Many persons gave symptoms pointing to the pleura; but absence of friction sounds, or dulness would show that the pains arose from the nerves—a neuritis.

Laryngitis of adults leads to aphonia and harsh voice sounds; that of children is usually catarrhal, and causes croupy breathing.

The parotid glands enlarged in some instances, particularly in infants. A few such also had otitis, with suppuration and enlargement of the upper cervical lymphatic glands. An infant eighteen months old had scarlet fever, from which she was fairly convalescent when influenza appeared in the family. Then bronchitis became severe, digestive disturbances marked, and suppurative inflammation caused perforation of both membrana tympani. This was proved by peroxide of hydrogen appearing in the nostrils when syringed in the ears. Desquamation was never very clear, and I question if all these conditions were not of grippe origin.

Digestive Disturbances—The sudden onset of this strange malady gave little time for malaise and premonitory symptoms, so common during the incubation of other fevers.

Loss of appetite and nausea are common. Vomiting is commonly present in those who have feeble or oversensitive stomachs. Children's stomachs readily unload from local or reflex causes, and we find many of them with the digestive type of disease, but it is not of long continuance. The bowels are rarely in a normal state, constipation being present early and diarrhœa coming later, and seeming to mark a crisis and return to health.

Nervous System—Blakiston says "that influenza is an affection of the nervous system, with its concomitant derangements of the organs of digestion, circulation, etc."

This is true, and many are the nerve symptoms produced. The poison seemed to overwhelm adults in the epidemic of 1889, Stupor was common; delirium also. Many seemed to lose reason, and thought of suicide. Some persons did take their own lives from this cause. Many were first warned of illness by intense headache, while others first noticed faintness or vertigo.

Many children had convulsions as an initial symptom. The mental development of a child is different from that of the adult, so they had no suicidal tendencies nor prolonged fits of melancholia. However, the langour, depression of spirits, lack of interest in surroundings, and general mental numbness was common.

The pains are intense in this malady, and vary only in seat and degree. Thus, many persons had trifacial neuralgia who were not subject to it before. Some had such intense pain in the neck as to be unable to move the head. Older children were affected in the same way. Nearly all suffered in some degree from articular pains of all joints, and a feeling of severe and deep soreness everywhere. Many of the poor expressed themselves as feeling as if they had been beaten. It is interesting to note that rheumatic subjects are positive that the pains surpass what they are accustomed to.

A form of lumbago and pain in the chest like intercostal neuralgia is of frequent occurrence. Many have pains in the stomach and bowels unlike that due to simple indigestion. Cramps in the legs I noted in some instances.

Convulsions, delirium, and stupor seem most common in the young. Melancholia, less pain, but more pulmonary trouble, seem to fall upon the aged. Two pneumonia patients, adults, had active delirium, and one of them attempted suicide.

Chills may usher in the disease, but they are not prolonged or severe. Often slight chills recur. Some observers speak of a quotidian ague forming part of the history. I have not observed cases in confirmation of this. The temperature is three or four degrees above normal, and may rise to 104° or 105°. High temperature indicates a complication, for example, pneumonia. A weak pulse is common, as in most cases of poison acting on the nerves. The kidneys are inactive for a few days, while congestion is everywhere present and normal secretions lessened. The urine is high-colored, of high specific gravity, and may contain albumen.

Complications—Among the complications occurred the following: Otitis, parotiditis, urticaria, jaundice, erysipelas, pertussis, and a baby with hereditary syphilis. The last was an infant five months old, living with foster parents, who were very ill from influenza. The child had snuffles before the influenza, but this was aggravated, and bronchitis added. The boy now (1895) is free from active symptoms of syphilis, but has the usual flat face so characteristic of the disease.

A boy of two years had pertussis in the autumn of 1889. For two weeks before the grippe arrived he had been free from cough and taken no medicine. With the attack of influenza, the spasmodic cough returned, and continued for another six weeks. A girl of eight years had a parallel experience.

A case of peculiar interest was that of a nurse who was prostrated by influenza of the neurotic form, with severe headache and stupor. Her temperature was 103° with the grippe. It dropped to nearly normal, and she considered herself convalescent for about two days, when I again found her with a rising temperature. She began to cough and sneeze, and in two days was covered by the eruption of measles. This was just fourteen days from the time she had been attending a family with measles. Her convalescence was slow.

There seems to be a relation between different infectious and zymotic diseases which is in some instances very close. During the winter and spring of 1891 measles prevailed with influenza. In the year 1894 the circumstances were the same, both diseases occurring in winter and spring. During the spring and summer of 1893 measles prevailed without any cases of la grippe. In 1895 a mild epidemic of measles followed influenza.

During the seventeenth and eighteenth centuries there were recorded twenty-six epidemics of measles and twenty-six of influenza. In four instances, *i. e.*, sixteen per cent., they occurred at or near the same time. This is more than a coincidence, and it is reasonable to suppose that the conditions favorable to one contagion may be the same to another. It will be noted that both are primarily catarrhal affections.

One case presented nearly every symptom and complication ascribed to the disease. A healthy Irishman (McEvoy), age twenty-six, began with severe "breakbone" pains and intense headache. In two days he had active delirium, and was with great difficulty kept in bed. He made several attempts to jump from the third-story window. Pain increased in his side, and pleuritic frictions could be heard. The lung steadily solidified, and he seemed a perfect case of pleuro-pneumonia. The temperature reached 105.2°. He had numerous bloody stools early in the course of his illness. He died at the end of a week.

Croupous pneumonia did occur, though the lobular type was more common. One pertussis case had pneumonia as well as grippe. A genuine pleurisy is not recorded in the list of children, but several appeared among adults. A girl, aged seventeen, in the third stage of phthisis, died two weeks after taking influenza, though death seemed imminent anyhow. A boy of four years had jaundice, complicated by influenza, and then followed by scarlet fever. A cervical abscess then formed, and not very long afterward he had whooping cough and diphtheria. With the latter he had acute nephritis, with scanty urine, containing albumen, blood and casts.

Complete suppression of urine is noted once. This appeared a more frequent symptom in adults.

As to type, the pulmonary prevailed in 1889–90; also in 1893–94. The neurotic type was very manifest in 1891–92. The other epidemics seemed to embrace the three forms alike.

Treatment—There is no antidote to the influenza toxine. As in other infectious diseases, when the poison is in the system, we must try to sustain the parts liable to suffer from its presence. Elimination must be promoted —from the lungs by expectorants, from the digestive tract by cathartics which increase secretion, from the skin and kidneys by drugs acting on the circulation.

In some cases cardiac depressants will act best, in others stimulants. If general treatment still leaves the patient suffering in some one part, give a symptom remedy for its relief. Phenacetin, antipyrine, or acetanilide proved good for the headaches. Doses must be small for small children. Old-fashioned diuretics and diaphoretics relieved fever and joint aches. Salicylate of soda came to be my routine for cases with pains and fever, two or three grains being given every three hours to older children. Stimulating expectorants, with carbonate of ammonia or camphor, were helpful after the first few days. To many patients I gave nothing but maltine and carbonate of ammonia. The latter must be dissolved in water before mixing with the maltine. In this way the irritating effect of the ammonia is obscured, and both food and stimulant are taken every few hours. The older children and adults did well on maltine with coca wine, which seemed to be especially adapted for enfeebled nerves.

For slow convalescence, give all the food possible, with remedies that aid nutrition, *e. g*,, beef juice, eggs and milk, wine-whey, malt and iron, or cod-liver oil. Embrocations are helpful; alcohol may be used one night and olive oil the next night. The ancients held embrocations in high esteem, but now we are prone to leave them for the athlete and prize-fighter. The sick and feeble are more in need of them. Alcohol was rarely given, as I do not often administer it to children with any disease. In this I agree with the quaint Dr. Harris, who wrote, in 1690, "all Sorts of Spirituous Liquors destroy the natural Ferment of all Stomachs, especially of those of Children; they weaken all the Nerves of the Body and most certainly drive the animal Spirits into all Sorts of Confusion."

Epidemic influenza is a self-limited disease, which we cannot cure if we would. Like enteric, or other fevers, the we can only treat symptomatically, and guide through storm from which we cannot escape. A little prophylaxis may be exercised by closing schools on the appearance of an epidemic and by discouraging attendance of assemblies, as lectures, theatres, etc.

In review, it appears that influenza is a very old disease, of which scarcely any new thing can be said. The forms of its occurrence are the same as centuries ago. The leopard has not changed his spots. It travels as of old, except faster, as people travel. The mortality is the same, even under nineteenth century treatment, relatively few dying directly of the disease, but many of secondary complications. The aged suffer most and the children least. The latter escape because they rarely have organic diseases. The one thing we have discovered is the cause. But how to meet and annihilate it remains to be demonstrated.

28 WEST THIRTY-SIXTH STREET.

The Action of Serum on the Healthy Organism—Arloing (*Lyon Méd.*, June 2, 1895) experimented on the action of the normal serum of a horse and of antidiphtheritic serum by making injections on healthy animals. First series: Three batches of eight healthy guinea-pigs each. The first batch were for control purposes. Subcutaneous injections of 0.5 c.cm. of normal serum were given daily to the second and third batch, December 13th to January 15th; from then to February 22d, 0.75 c.cm. daily. On February 22d the first batch had increased 34.28 per cent. of their initial weight, the second batch 15.82 per cent., and the third 19.07 per cent. This shows that normal serum had a prejudicial effect on nutrition. Second series: Very young guinea-pigs were used with a view to their growing. The first batch consisted of two "control" animals. Every day the second batch of two animals was injected with 0.75 c.cm. of antidiphtheritic serum—enough to render immune an animal more than fifty times their weight. After twelve days there was a slight difference in weight between the two batches in favor of the control animals, and during the whole time the experiment lasted (forty-five days) the first batch increased 50 per cent., the second only 44.5 per cent. Thus there was a sensible retardation of development in the animals which were injected with antidiphtheritic serum.—*British Medical Journal.*

NASAL AND POST-NASAL CATARRH; ITS TREATMENT AND PREVENTION IN YOUNG CHILDREN.

BY J. BERMANN, M. D.

Washington, D. C.

In bringing the subject of my paper before you, I feel tempted to commence with the words which I heard Prof. von Rhinecker in Würzburg utter in his Clinic. To the best of my recollection, he said: "The disease with which we are to become acquainted here, is one of the most important for the student to know; he must be prepared to meet it at every step in his future career, as almost everybody has it; I have had it, so have my family, and you all will get it, if you are as yet free from it." This quotation will hold good in a much wider sense with my subject. I think I am justified in saying that in this country everybody is more or less afflicted with catarrh of the upper respiratory tract, and I propose to give you this evening a very short resumé of my views on this disease and the conclusions I have reached after fifteen years practical experience, and what is of more importance, how a great deal of it can be prevented. You will, I hope, agree with me, that our limited time forbids an exhaustive quotation of the literature, and excuse me if I do not mention every author who holds the same views that I do, or is opposed to them. Before I enter in *medias res* I wish to state that I do not propose to include those forms of catarrh due to such causes as syphillis, tuberculosis, and mechanical irritants.

As you well know, catarrh is caused by catching cold, as the popular saying goes. It means that the person affected has more or less profuse discharge from the nose (I am at present speaking of the earliest stages) and has fits of sneezing. The nose is usually congested to such an extent that mouth breathing becomes a necessity; there is a considerable dropping of phlegm from the posterior nares into the pharynx or larynx and with smaller children it is frequently accompanied by more or less fever. It runs its course usually within a fortnight and an almost perfect restitution *ad integrum* takes place. I say *almost*, because it always leaves a disposition to a repetition of the attacks, and very frequently a slight congestion or thickening of the nasal mucus membranes. With small children a quite distressing cough accompanies it often and then the family physician is usually called in. He will usually prescribe one of the customary cough mixtures, and as the cold will get well in time of its own accord, if the patient is not injudiciously exposed, he will naturally receive more or less credit for his satisfactory treatment.

In the majority of cases, especially with the poorer classes, the parents would not even dream of calling in a physician for such a little thing as a cold in the head, and the foundation is laid for all the unpleasant sequelæ due to catarrhal congestion of the nasal and post-nasal mucous membranes, such as are brought to the specialist in later years when the advanced stage of the disease necessitates energetic special treatment. One of the most frequent impediments to breathing which the specialist has then to deal with, is the deflection of the septum, the origin of which, according to all the existing hand-books, seems to be hidden in impenetrable mystery. Even in the last and most excellent handbook on this subject, The Diseases of the Upper Air Passages, by Prof. Moritz Schmidt, of Frankfort-on-the-Main, the author seems inclined to consider them caused principally by mechanical injuries, acquired during early infancy. I must confess that I do not think it likely that even a number of slight falls on the nose will produce such a lasting deformity as a deflection of the septum, especially when we consider the elasticity of the organ in small children and its slight prominence. I have given a good deal of thought to the subject for the last few years, and think I have found a more logical explanation for the excessive frequency of its occurrence.

As I said before, a cold in the head in very small infants is a very frequent thing, and here we have in my opinion to look for the origin of the deflected septum. We all know that a cartarrhal congestion of the membrane means an increased supply of blood to the portion affected and in course of time, a thickening not only of the submucosa, but also of the mucosa and its epithelium to such an extent that in transverse sections of such membranes we often find the epithelial layer ten times its original thickness. The submucosa forms also part of the perichondrium and periosteum, and we can take it for granted that the same cause which will produce such a hyperplasia of the outer layers, is sure to produce the same effect on the tissues forming the septum, *id est* the cartilage and the bone. Without entering too fully into histological details, I will simply state that an increased growth of the vomer both of its cartilage and bone, must take place principally at its upper and lower portion, that is to say, the septum narium will grow faster than it would under normal conditions. As it is imbedded in a fixed position both above and below, it will have to give way and bend out to one side or the other in order to make room for the increase in its height, and then we have a deflection which may be a very slight one in the beginning, but when it once exists it will increase in size with the increased size of the organ, especially if the tendency to catarrh of the nose is not checked in early infancy, when it can be done with comparative facility.

I have always followed the advice given by Henoch to treat the nose of an infant, even if it should be only a few days old, if it has a cold in the head and does not breathe perfectly, with a two per cent. solution of nitrate of silver applied with a brush (see cut). There are, no doubt, other agents which will also give satisfaction, but the nitrate of silver solution has always proved absolutely inoffensive, even with the youngest babies. Care must be taken, of course, not to have the brush overloaded with the fluid, so that it can drop into the larynx. The

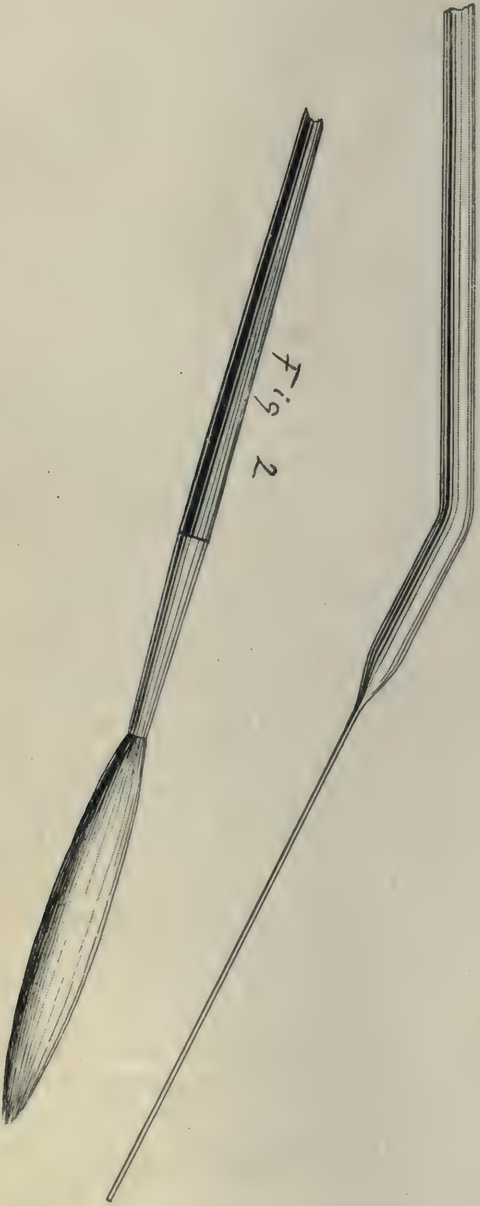

Fig 2

Fig 1

child's head is held firmly between the knees of the operator, while the body, hands and feet are held by the nurse, who is sitting in front of him. The baby will, of course, kick vigorously against such interference with its nasal organ, but you will have the satisfaction (treat every slight cold in an infant in this manner,) to know that you have done a great deal towards preventing the child from getting a deflected septum, or affections of the ear which are in almost all cases due to neglected nasal and post-nasal catarrh. I would even go further and say to you, call the mother's or nurse's attention to the fact that the only natural way for a baby to breathe is through its nose with closed lips, *and the breathing should be almost inaudible.* If the baby makes any noise in breathing through its nose apply the next day the nitrate of silver solution in the manner described, or show the mother or nurse how to do it properly. With this simple remedy you will do your patient more good than if you wait until the catarrh is fully developed so that you will have to send the patient to the specialist. I am decidedly of the opinion that in otherwise healthy children the hyperplasia of the adenoid tissue in the post-nasal space can be avoided by such interference with an acute rhinitis. The development of this hyperplastic tissue can only be explained by an irritated condition of the post-nasal membranes. This irritated condition always exists when the infant or child is forced to breathe through its mouth, and cannot get rid of the accumulated phlegm in its nose and nasopharynx. The consequence is that the secretion on the pharyngeal membrane is dried up by the inspiratory and expiratory air passing over it. The irritation set up by this layer of dried mucus spreads in all directions and it can easily be imagined how such a condition of affairs will produce hyperplastic adenoid tissue as well as hypertrophy of the nasal membranes. You have only to stand by and watch a child sleeping with obstructed nose and observe how often the poor little thing tries to shut its mouth and breathe naturally, hear the unnatural noises it makes, and you will soon be convinced that to neglect such a cold in an infant can throw upon you the responsibility of having the child become a victim of chronic nasal catarrh, post-nasal catarrh, adenoid vegetations, hypertrophy of the pharyngeal tonsil, or middle ear catarrh with subsequent deafness.

This brings me to another important point. Galvano cautery is with most specialists the remedy par excellence for chronic nasal catarrh. They destroy with the cautery knife or point more or less of the hypertrophic membrane, in order to produce a cicatricial contraction, and will for a while enable the patient to breathe freer through his nose. It has been observed by me, as well as by others, especially Victor Lange of Copenhagen, that after a year or two, the patient is in a much worse condition than he was before. The hypertrophy has disappeared, it is true, in the cases treated by cautery, but instead of the hypertrophic catarrh the unfortunate is now afflicted with an incurable atrophic catarrh, and if we can manage to keep his nose clear from those crusts of mucus and dust which accumulate in such noses, we have done everything in our power. For such hypertrophies where others use the galvano cautery, chromic acid, glacial acetic acid, or other caustic, I use the tri-chloracetic acid only, and have done so for a number of years. I believe I was the first to apply this acid to the membranes of the nose in catarrh. I do not wish to set up any claim of priority, but I may safely say that I have used it longer than any of those who have written papers on the subject. The reason, perhaps, why I did not publish my mode of application, was that my method of applying the acid would very likely in the hands of many, prove either ineffective or even dangerous to the patient. The instrument I use is a glass tube (see cut), drawn out very fine and bent at a proper angle. To the large end I fasten a rubber tube with a mouthpiece, to enable me to force the acid out by blowing into it. It is unnecessary to use any dilution of the acid for purposes of cautery. A certain amount of the crystals in the bottle will always melt in ordinary temperature, and this I draw up by suction into my glass tube where it remains by capillary attraction. The tube will only hold a small fraction of a drop, so that I need not fear to apply it in excess, even if I force it all out. After the nose has been thoroughly cocainized by cotton plugs, moistened with a four per cent. solution, the acid is applied to the hypertrophic places only. The advantage of this method is that you can, provided your hand is steady enough, count upon its reaching the place you aim for in any part of the nose you can illuminate, and no other. It does not form a slough, and if you use the precaution of cocainizing the nose afterwards, the patient experiences little or no inconvenience. These applications should be repeated at intervals of from one to two weeks, in the beginning very carefully, as the reaction varies considerably in different people. I have seen hyperthophies fully a quarter of an inch thick absolutely melt away after three or four such applications with the perfectly normal mucus membrane showing in its place.

Not only in hypertrophic catarrh would I advocate the use of this acid, but also in those forms where there is more tendency to atrophy, that is, where the membrane proves to be abnormally thin so that even a very slight spray will make it bleed. In those cases I apply only very minute quantities of the acid, usually only on the lower concha, and I have seen in the course of one year such an abnormally thin membrane change its character completely and present a perfectly normal appearance. Even in cases of ozæna of several years standing have I been able after sufficiently long treatment to effect a complete cure of this loathsome disease. It has been recommended lately by St. v. Stein, in Moskow, to use a strongly diluted solution of the acid in organic cases, and I have followed the suggestion and given it a trial in some appropriate cases. The result was not as encouraging as I was led to believe, and as the application is much more painful and has to be repeated daily two or three times, I have returned to the use of the undiluted acid at longer intervals after a thorough cleansing of the nose.

Not only in hypertrophic and atrophic catarrh has the trichloracetic acid been of such service to me but, also, in polypoid degeneration of the nasal membrane have I been able to achieve such results as cannot be claimed by any other method of treatment. We know that a polypus after extraction with a snare or forceps almost without exception returns within a comparatively short time, and even the most thorough cauterization of the pedicle will quite frequently not prevent its recurrence. Of course, if a polypus obstructs the nose so as to prevent free breathing and shows a pedicle, I always take it out first with the snare. But this I do principally to give the patient some immediate relief and to enable me to apply the acid to the origin of the trouble—the diseased ethmoid bone. I fully concur with Woakes on this point, who first called attention to the fact that in all polypoid degeneration of the nasal membrane co-exists an inflamed condition of the underlying bone, the so-called ethmoiditis. I have not yet seen the case of a nasal polypus where a careful search would not reveal to me denuded bone, and to this I apply the acid in, comparatively speaking, heroic doses. For this purpose I do not know of any instrument that could take the place of my little glass tubes. You may tell me that a fine platina needle would even do better than one of glass, and I once thought so too. Experience has shown me that this is erroneous as the capillary attraction of the fine tube will always draw a little mucus into the tube where it forms an insoluble block and nothing short of making it red hot and burning it out will remove it. If there were any way of preventing this, I am willing to concede that a fine platina needle would be sometimes preferable, as the danger of breaking the tube is avoided. But the very fragility of the glass tube, on the other hand, is a point in its favor, as I am enabled, in case it gets obstructed to break the obstructed part off and go on with my application. As the glass tube serves also as a kind of probe with which to detect the denuded bone, I am thus enabled to judge of the condition of the bone every time I apply the acid. Where I find it undesirable to remove the polypus, especially when it has a broad base, I force my glass needle gently into the growth while forcing air into the tube, in order to prevent the tube from getting obstructed until I reach the bone, or its immediate neighborhood, and deposit the contents in that place. A very considerable shrinkage of the polypus takes place in a comparatively short time after sufficient time has elapsed to allow a free inspection of the affected part, the application is repeated in intervals of one to two weeks or more, until the membrane and bone have resumed their normal condition. This will frequently take quite a long time, but any intelligent patient, especially after he has been through the mill of polypus extraction by snare and forceps, will prefer this method infinitely, as it is with the help of cocaine absolutely painless and entails no loss of blood whatever. As you are entitled to promise the patient a much better result by this method of treatment, you will find it worth your while to try it, provided you feel sure enough of your hand and eye to manipulate such a very delicate and fragile instrument as this little glass tube. Unless you do feel perfectly sure of yourself I would not advise you to attempt it, as the results might be disastrous.

Another kind of obstruction, about the origin of which I gave you my views a little while ago, are the deflections of the septum whose removal are, in my opinion, the cause of so much unnecessary bloodshed. I have seen people brought nearly to the brink of the grave from loss of blood caused by such operations on the nose in the hands of inexperienced and rash young specialists. It seems to me that a perfect mania for cutting and drilling and sawing has set in, and I for one, wish to put myself on record that all this heavy surgical work is in a great many cases absolutely unnecessary. The nose is rather too delicate an organ to be submitted to such rough usage, if there is any other means at hand to obtain the desired result. This we have in the application of electrolysis to the deflections, ridges, and spurs of the septum, whether they are bony or cartilagineous. I have not yet seen the case presenting such obstructions that I could not remove by electrolysis, and although the current is not entirely painless, cocaine will help to make it nearly so, and I have frequently applied it even to children of five or six years. I should recommend this method all the more in cases of small children, as they will submit to this treatment much more gracefully than to any other, even if it has to be repeated a number of times. In most cases, the obstructions in a child's nose will absolutely melt away after three or four applications, while generally considerable relief is experienced after the first time. Among a number of cases on which I operated in this manner, I recall one which presented a complete obstruction of the left nostril, so that the patient was absolutely unable to draw air through it or expel it, at any time. This I attacked with my electrolytic needles, and had the satisfaction after about six months treatment in bi-weekly intervals, not only to get a clear breathing space, but also sufficient room to inspect the nose as far as the post-nasal cavity. There was never a drop of blood lost, the patient never had at any time any inconvenience from it, and I suppose you will agree with me that even if the operation takes longer time, it is much safer and fully as sure as any other. I almost without exception use the bi-polar needles and a current of from ten to fifteen milliampères with grown people, with children less; for about ten minutes, or as long as the patient will hold still and does not have to sneeze. As the handles supplied by the instrument makers are too clumsy and heavy I have had a handle constructed for the purpose, and can recommend it as a very useful and inexpensive little instrument. It is immaterial what battery is used, but one must be sure to have one that works perfectly, so that the current never gets interrupted and which is provided with the milliampère-meter and rheostat. I have wished only to give a short resumé of my views on this subject, and will conclude with an appeal to the general practitioner never to neglect a slight cold in an infant, but to use the nitrate of silver applications described above, and he will find that there will be fewer cases of chronic catarrh and less use for specialists.

1010 I STREET, N. W.

The Bacillus of Tetanus—That the exciting cause of tetanus is now generally believed to be due to a specific micro-organism may be considered as reasonably well settled. The identity of this bacillus was established by Nicolaier, of Goettingen. The researches of Brower and Curtis, in 1882, proved the existence of bacteria in the blood in this disease. In 1884, Nicolaier inoculated animals with soil obtained from roads, with the result that symptoms similar to those of tetanus were developed. The earth used, when baked or otherwise sterilized, was found to act merely as a local irritant, forming abscesses.

A bacillus was discovered by Rosenberg in the nerve-substance of tetanic subjects. A chemical product of the pure cultures was used by Brieger. Beumer used all of these means, and the whole question was fully investigated again by Eiselberg. These researches at once placed the disease with other classified specific affections, and demonstrated it to be due to the entrance into the circulation of a microbe which is universally distributed in earth and dust. Carle and Rattone gave the first impulse to this research. The bacillus of Nicolaier is a slender, delicate rod, with rounded extremities. It is mobile, extremely hardy, flourishing, and growing at ordinary temperatures. Its growth is retarded or prevented by a ten-minute exposure to a five per cent. solution of carbolic acid. A temperature of 80° C. (176° F.) does not materially affect it, but that of 100° C. (212° F.) prevents growth, even after a five-minute exposure, and, as in the case of the acid, absolutely retards all further development. It flourishes in dust, garden-soil, putrefying fluids, and in the ditches where the carcasses of animals, particularly those of horses, have been buried. The bacilli are usually located at a certain depth, almost always being nearer the surface of the ground.—Harold: *Med. & Surg. Bulletin.*

Clinical Memoranda.

A CASE OF INFANTILE SCORBUTUS.

BY CHARLES DOUGLAS, M.D.,

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In October, 1894, I was called to attend L. B., aged ten months. I found the child lying on a pillow on a table, partially stripped, only a little shirt remaining on it. Its mother met me with a very anxious, distressed face; she was in the act of trying to bathe the little one, who was moaning piteously and crying with pain or fear whenever any attempt was made by the mother to move it or perform the slightest act in bathing which moved the child. This was particularly noticeable when the legs, thighs or hips were disturbed. She seemed to have no pain in the arms, shoulders, or neck. Her general appearance was white and emaciated, but her eyes were acutely alert watching the approach and movements of all around her, lest she should be disturbed. Careful inspection showed the skin of dusky color, which on close examination was caused by multitudinous pin-point extravasations into the skin and beneath the cuticle. The legs were lumpy about the epiphyses and tender. No swelling of the joints proper was visible, but great tenderness was evinced in the whole limb, apparently in the flesh, and all tissues soft and hard, especially near the knees and ankles. She obtained little sleep, and could not be moved about without causing her great pain.

The history showed a child nursed by the mother for one month and then fed sterilized milk and proprietary foods. She was healthy till six months old, which was in June, or the first hot month of the season; she then showed diarrhœa. Many different prepared foods, always sterilized carefully, were tried; also different kinds of milk, condensed and natural, all being carefully sterilized before feeding. In fact, the greatest care was taken always to have everything in the line of food carefully cured or sterilized by heat before giving to the child. The only feature which seemed to be overlooked in the diet was the quantity given daily; here there seemed to be no limit except the capacity of the child to swallow. Even vomiting was only a very temporary limit to its feeding capacity. Under this line of dieting the diarrhœa continued and, as the mother explained, frequently the milk passed in stool looked exactly as it did when swallowed. This is very characteristic of what frequently happens where the diet is unlimited.

The emaciation increased steadily, and the child illustrated the idea, not only of "starvation in the midst of plenty," but also of "starvation while yet filled with plenty." All kinds of remedies were tried ineffectually for four months to control the so-called diarrhœa, but without avail. Both physician and parents became discouraged finally with the complications and failures, the soreness of the limbs being looked upon and treated as rheumatism, but without any benefit.

Inspection of the mouth showed the tongue red, angry, and spotted with a white coating. The gums were swollen and spongy, which had been attributed to teething.

A careful examination convinced me that this was a case of scorbutus, and that this sad result was induced by cooked food, and not only by cooked food, but also by this food in too large quantities, the latter not only causing, but also perpetuating the diarrhœa.

I recommended that all medication be stopped, except some bismuth every three hours, while awake. A wet-nurse was secured, but as the child would not nurse, the milk was drawn and fed from a spoon. This was continued for two weeks, and also raw meat juice and sweet orange juice. As the wet-nurse had failed then, raw, fresh cow's milk was substituted for the human milk. This dietary was continued, gauging the amount strictly by the child's weight, rather than its age, enough never being given to cause vomiting. The diarrhœa ceased, the pains and soreness disappeared from the legs, comfortable sleep returned, and in four weeks' time she was carried around sitting on her parents' arms like any healthy child, and showing no signs of suffering about the hitherto painful legs. Her recovery was continuous, and at fourteen months old she was walking around by the chairs, fat and strong. In this case, two factors were instrumental in producing the scorbutus: one was the sterilized milk and cooked foods, the other was the undue amount of these foods. I find frequently that the amount of milk is the sole cause of diarrhœa. I find also that confusion occurs in the diagnosis of the pains in these cases. Two other children came under my observation this last year, where the same train of symptoms was produced by the same dietetic causes, and the same diagnosis was made of rheumatism; but in both cases a previous diagnosis of rachitic deformity was made by surgeons and splints were applied. Both of these cases also occurred in families in good circumstances, where every supposed care was given to the diet of the little ones. The diet in all these cases was proprietary foods, with sterilized milk added thereto at different times, or substituted for a part of the time.

There seems to be too much confidence placed in the mere act of sterilization, regardless of the actual character of the milk or food, and also regardless of the amount of food which should be given at each feeding. I am satisfied that sterilization is often receiving too much prominence in the directions given for feeding a young child, and not enough attention is given to the constituents of the food and the amount requisite daily to support it. Age is too often considered, rather than the size and weight of the little one, and consequently the child is over fed.

The digestive organs may bear this treatment or abuse for a time without any bad symptoms, but when carried too far very obstinate dyspeptic and diarrhœic symptoms are the result, which yield slowly only to careful dietetic treatment.

Editorial.

INTESTINAL OBSTRUCTION.

INTESTINAL obstruction is a comparatively common affection during childhood and infancy. It may be due to congenital malformation. If such malformation be extreme, the infant does not long survive, but soon dies with all the symptoms of obstruction of the bowels. In rare instances, obstruction results from constriction by adhesions, the impaction of foreign bodies, fæcal impaction, or diverticula. Volvulus is comparatively rare in children. When it occurs, its most common site is the sigmoid flexure. Pain in such cases is violent, and the constipation is obstinate, there being no passages either of fæces, mucus, blood, or flatus. Vomiting occurs late, and is rarely urgent. Operation is extremely unsatisfactory, as the volvulus, even when successfully straightened, is prone to recur.

Of the various conditions to which intestinal obstruction may be due, intussusception is by far the most common among children. In infancy, intestinal obstruction and intussusception are almost synonymous terms. In more than one-half of all cases, the lesion begins at the cæcum, the ilio-cæcal variety being the most frequent. The cæcum is first inverted, and afterward the colon. The ileo-cæcal valve is pushed before the ileum, and is found at the apex of the intussusception. In rare cases, the ileum slips through the valve, forming the ileo-colic variety. In all forms of intussusception except the ileo-colic, the apex remains constant, while the neck changes its position, the intussusception growing at the expense of the sheath. The tumor, therefore, advances. In the most common form, the ileo-cæcal, although the lesion begins on the right side, when it has become sufficiently extensive to be detected by palpation, the tumor is felt on the left side. The mass with the ileo-cæcal valve at its apex may commonly be felt at the rectum, and not infrequently it actually protrudes.

The symptoms, frequently obscure at the outset, usually become distinctive as the lesion progresses. Violent pain, at first spasmodic; vomiting, frequently persistent; obstinate constipation, with a discharge of mucus and blood from the rectum; tenesmus, which, with the discharge of mucus and blood, may lead the unwary into a diagnosis of "dysentery"; and the presence of a tumor, are the points upon which diagnosis is to be rested.

THE TREATMENT OF INTUSSUSCEPTION.

INTUSSUSCEPTION, being a mechanical condition, must be relieved by mechanical means. Drugs, except opium, are either useless or dangerous. A cathartic should not be used under any consideration when there is even a suspicion of this condition. If one has been administered before the diagnosis has been made, its action should be checked as far as possible by the free use of opium.

Opium in small doses, by relieving pain, may prove, in the early stages, of the greatest service. The chief objection to its use is the danger that it will mask the symptoms, and the attendants will be led to the false belief that the patient is improving.

Attempts at reduction should first be made by means of injections. Time should not be wasted upon various methods of inflation and taxis. Injection of warm water by means of a fountain syringe is so far superior to al other methods that when it has been thoroughly tested and has failed, operation should be resorted to. Thorough testing does not mean spasmodic efforts with a bulb syringe. This is a dangerous instrumsnt, for a man may easily apply a pressure of ninety pounds to the square inch—a force sufficient to rupture the intestine. Here, as in so many other conditions, spasmodic pressure may utterly fail, while continuous, steady, and properly-regulated pressure will succeed. Such pressure cannot be obtained by a bulb syringe, a bellows, a syphon of Vichy water, or the generation of any gas. We are indebted to Forest, of New York, for careful observations upon the amount of pressure which the intestine will sustain. The normal intestine, he found will sustain without injury six pounds to the square inch. Great pressure may be obtained by a column of water according to a well-known hydrostatic law. The elevation of the receptacle each two and one-half feet will add one pound pressure to each square inch. Steady and efficient pressure can be obtained, therefore, by proper elevation of the bag of a fountain syringe. It may safely be held twelve feet above the patient, but less pressure should be tried first. Such pressure has the great advantage of being applied in every direction. It distends the sack, and exerts force upon the tissues which cause the obstruction at the neck of the invagination. After the end of the second day, it is unwise to use so much force, for the bowel by that time may have become softened and weakened.

In giving the injection, the child is anæsthetized and the hips are elevated. A large-sized tube is used, and the rectum is occluded by means of a bandage wound about the tip in the shape of a cone. The pressure, graded by the elevation of the bag, should be steadily applied for thirty minutes. The greatest gentleness should be observed throughout. Should these measures fail when conscientiously carried out, laparotomy should be performed, although the results of this operation have not, on the whole, been encouraging. They have been somewhat more satisfactory, however, during recent years. Great improvement in the results will undoubtedly be obtained by earlier operation under strictly aseptic methods.

BACTERIOLOGY OF DIPHTHERIA.

On another page will be found the report of investigations conducted by the bacteriological laboratory of the New York Board of Health. It presents our latest knowledge of the bacteriology of diphtheria and the methods by which that disease is propagated. Most of these facts are presented from the standpoint of the bacteriologist and laboratory worker. The wish recently expressed by one of our contemporaries that a little more of the experience of the general practitioner might be allowed to leaven the theory of the bacteriological laboratory is, however, applicable in this case in but a slight degree.

While it is the fixed belief of all competent authorities that there is no diphtheria without bacilli, the belief is beginning to be equally strong that the mere presence of the bacilli of diphtheria on a mucous membrane does not necessitate the diagnosis of diphtheria. The bacteriologist may determine that the specific germ is present; the clinician only can determine that the patient has diphtheria, but in reaching this conclusion, the evidence furnished by the bacteriologist may be of the utmost value. The diagnosis may, in fact, be impossible without such evidence. The bacteriologist without knowledge of the clinical conditions may properly report, "The specific germ of diphtheria is present." He cannot with safety say, "The case is one of true diphtheria." Criticism, however, recently made upon the Board of Health for introducing this latter statement into its reports is not, in our opinion, an entirely just one. The report reads, "The examination of the cultures made by inoculating the tubes with the exudation from the throat." This means that a pathological condition is present. If an "exudation" containing the specific bacilli is found in the throat, the report of the case as one of true diphtheria is correct. If the culture has been made from a throat without an exudation, the Board of Health may properly claim that it has received false clinical data and is not to be blamed for a wrong conclusion. The physician who sends incorrect data should not complain if he receives an incorrect diagnosis. Still, it would be wise if the bacteriological laboratory would confine itself strictly to its own proper work—that of determining and reporting what bacteria are present in the culture, allowing the attending physician to use this knowledge together with the clinical evidence to make up the diagnosis.

THE recent tendency to speak of "bacteriological diphtheria" is unfortunate. Diphtheria is a disease, not a microbe. A person may have the microbes, but if he does not have the disease, he does not have diphtheria. The accident of having the bacilli of diphtheria on the coat sleeve does not mean that the wearer of the sleeve has diphtheria. Nor does the accident of having them on the mucous membrane of the throat necessarily mean diphtheria, though it is to be sure, more probable. Both persons may be dangerous to others, but that, again, does not constitute diphtheria. It does not seem possible that a person can remain long in a room with a serious case of diphtheria without the lodgement of a certain number of bacilli upon the mucous membranes, yet how infrequently do adults contract the disease. The presence of bacteria does not necessarily mean the occurrence of disease.

THE CASE OF PYGOPAGUS reported by Dr. Jacobi in the present number is one of the greatest interest. The rarity of this condition is shown by the fact that, after the most careful search through medical literature, but thirteen cases could be found reported during a period of over four hundred years. Dr. Tynberg's case is the fourteenth. The term pygopagus is applied to a double monster consisting of two complete individuals joined in the region of the sacrum, or coccyx. The most celebrated case of this character was probably Helen and Judith—Case IV—who were born in 1701 and lived twenty-two years. The notoriety gained in this instance was due largely to the fact that they lived for so long a period, life being in most cases limited to a few months. The most celebrated case in this country was that of the Carolina twins—Case IX. These girls lived to adult life, and were at one time widely exhibited. Owing to the extreme distress and misery which must necessarily attend such a peculiar malformation, the shortness of the life usually allotted to them must be regarded as a blessing.

Current Literature.

I—MEDICINE.

The Antitoxin Treatment of Diphtheria. (Editorial, *British Medical Journal*, 1895, No. 1808.)

It was evident from the extraordinary interest that was taken in the work of the various sections at the recent meeting of the Association, when antitoxins and antivenenes formed the subject of discussion, that all who have had extended experience of the use of these therapeutic agents, especially in connection with the treatment of diphtheria, have come to the conclusion that, from the clinical point of view at any rate, these substances possess considerable value. Although this has undoubtedly been the general experience, it is only on an occasion such as that afforded by the meetings of the Association that comparisons of results, clinical and experimental, can be brought before, and discussed by, any large numbers of the profession.

The Section of Medicine set an exceedingly good example in obtaining as the foundation of their discussion a most interesting experimental paper by Dr. Sidney Martin, whose previous work on the question was a sufficient guarantee that the subject would be ably and scientifically dealt with, and those who were present could not but be struck first of all by the breadth with which the subject was handled; and, secondly, by the thoroughly scientific spirit that pervaded both the methods adopted and the conclusions arrived at.

After a lucid account of the present state of our knowledge of the pathological process in diphtheria, and of the poisons secreted by the bacilli, Dr. Martin gave the result of his own investigations, showing that extensive nerve and heart muscle degeneration—the pathological characteristic of diphtheria—was produced by injection of pure diphtheria toxin, from which it is evident, that the Klebs-Loeffler bacillus is the cause of diphtheria. His experiments on the effect of the diphtheria antitoxin showed, that when administered in sufficiently strong doses it counteracted all the effects of the toxin or the diphtheritic ferment. It has only a slight effect on the febrile temperature, produced by the albumose, but it completely counteracts the fatty degeneration of the heart, and to a very great extent also the nerve degeneration, which was insignificant in extent. It was found, also, that the injection of large doses of the antitoxic serum into the venous circulation of the rabbit, produced but little effect on the body temperature, and no loss of weight, appearing to be, as far as could be judged, a perfectly innocuous substance.

It is evident from these experiments, carried out under such exactly observed and controlled conditions, that the actions of the antitoxic serum may be followed with the greatest nicety. The actions are, first, that antitoxic serum, even when injected in considerable quantities, produces no appreciable injurious effect even on very susceptible animals. Secondly, that this serum, when given in sufficient doses, appears to neutralize completely the action of the active ferment, which plays so important a part in the production of symptoms of diphtheria; whilst thirdly, it also neutralizes in a very marked degree the effect of those albumoses, which are formed in the later stages of the disease, apparently through the action of the ferment on the albuminoid substances, with which it comes in contact, and which appeared to be stored up in the body for some considerable time after the ferments have ceased to act.

Dr. Goodall, who dealt only with cases, in which a bacteriological examination had been made, making every allowance for age and for mildness of epidemic, is satisfied that antitoxin is a valuable therapeutic reagent, especially in those cases in which tracheotomy was performed. The proportion of cases, in which there was albuminuria, was nearly the same, but the percentage was slightly higher in those cases treated with antitoxin.

Professor von Ranke insisted on the fact, that under the influence of the serum treatment, diphtheria loses its progressive character, and in support of this he cited the extraordinary result that the laryngostenosis disappeared in 28.4 per cent. of his cases, whilst formerly he had never been able to obtain a higher percentage of the disappearance of that condition than 5; whilst operation was never necessary at a later period than twenty-four hours after the treatment had been commenced.

Professor Baginsky added to his already published statistics, and showed that the mortality in his clinic in

Berlin had been brought down from an average (of over four years) of 41 per cent. to 15.6 per cent.

A Discussion on Serum Therapeutics. (*British Medical Journal*, 1895, No. 1807.)

Dr. E. Klein opened the discussion with an extended paper on "The Nature of Antitoxin." In reviewing diphtheria, he said that the chain of symptoms constituting true diphtheria in man is primarily caused by the growth and multiplication of the diphtheria bacilli in the affected mucous membrane; by this growth and multiplication certain metabolic products result (diphtheria toxins), which are absorbed into the system, and give rise to the constitutional changes that characterize diphtheria; therefore the local inflammation and necrosis caused by the growth and multiplication of the diphtheria bacilli is one thing, and the absorption and action of their toxins in the body generally is another thing. Now, if it can be shown, that the serum of diphtheria-immunized animals is capable of neutralizing the diphtheria toxins, and is also capable of counteracting the growth and multiplication of the diphtheria bacilli themselves, a firm scientific basis has been given, which should, and he thinks does, enable and justify us to apply therapeutically such serum; the higher the antitoxic and immunizing power of such serum—as tested on the animal—the more reason there is for saying that also in diphtheria, in the human subject, the neutralization of the toxin, already circulating in the affected body, and the further multiplication of the diphtheria bacilli in the diphtheritically affected mucous membranes will be more effectually neutralized and stopped; that is, the disease will be brought to a standstill, and a cure will be effected.

One further property that the serum of diphtheria-immunized animals possesses, is, that it is capable on injection into other animals, of furnishing these with a resistance against a subsequent infection with the diphtheria bacilli. This protective action is, unfortunately, not of long duration, nor, for the matter of that, is the resistance produced by a first moderately severe attack.

Although certain adverse criticisms have been brought forward against its use, one thing, he thinks, is found, namely, that the scientific basis for the antitoxin serum is as firmly founded and as thoroughly established as the application of any known drug.

Dr. J. W. Washbourn, Physician to the London Fever Hospital, said that from a careful and critical examination of the statistics hitherto published, he had no hesitation in saying that they definitely prove the vast superiority of the antitoxin treatment over any other method of treatment that has hitherto been adopted.

The effect upon the exudation may not be apparent for the first day or two. During the first twenty-four hours the exudation may even increase, but as a rule it soon begins to clear, and when once the process has started it rapidly terminates. When the larynx is affected, the rapid clearing of the exudation frequently prevents the necessity of performing tracheotomy.

The temperature in diphtheria, apart from complications, is not of great importance as indicating the severity of the attack; consequently the effect produced by antitoxin upon the temperature is not of great moment. The speaker's own experience would show that if the temperature is much raised, the injection of antitoxin causes it to fall, but when the pyrexia is moderate, no marked immediate effect is produced.

Antitoxin does not appear to have any direct effect upon the heart. With the general improvement in the patient's condition, the pulse slows down, and becomes regular, but this is not immediately manifest. There certainly is no reason for supposing that any deleterious effects are produced upon the heart.

It must be remembered, that death from diphtheria is often preceded by abundant albuminuria, and by scantiness or suppression of urine. Other symptoms are usually present, especially those of cardiac failure; and it is extremely difficult to say whether the patient is dying through the heart or the kidneys. Both the effect upon the heart and that upon the kidneys are no doubt caused by the diphtheria toxin, and such cases should be more correctly described as deaths from the direct toxic effects of the disease.

Under the antitoxin treatment similar symptoms may precede death; but the opinion of those who have had a large experience is decidedly opposed to the view that the symptoms are in any way brought about by the treatment.

When antitoxin has been injected into healthy individuals as a preventive measure, or has been used for the treatment of non-diphtherial cases, albuminuria is not produced, showing that the remedy has no effect upon the healthy kidney.

Before we can arrive at a conclusion as to the effect of the antitoxin treatment upon the occurrence of paralysis, more extended observations are required. In this connection we must not forget that the more severe the attack of diphtheria, the more likely is paralysis to supervene. Many fatal cases would probably have developed paralysis had they recovered. Consequently when the mortality is lowered by treatment, the actual number of cases of paralysis may increase through this cause alone.

There are certain conditions in diphtheria, which are not affected by the antitoxin treatment. In many cases the exudation is invaded by various putrefective bacteria, which produce substances of a poisonous nature. The absorption of these substances increases the severity of the attack. Antitoxin has no influence upon these bacteria, and this complication can only be combated by the local application of antiseptics. Again, a secondary invasion of the throat by streptococci not infrequently occurs, and may occasion a general septicæmia or localized inflammation in other parts of the body, especially in the lungs. This condition is also not affected by antitoxin.

Dr. Nestor Tirard gave his experience at the Evelina Hospital in the treatment of diphtheria by Behring's antitoxin. He first spoke of the high rate of mortality, which had preceded his employment of antitoxin, and then reviewed the results obtained more recently. He stated that the good effects noted had reference to the pulse, temperature, nervous system, and the diphtheritic membranes. With regard to ill-effects, it was found, that albumen was found in the urine in many cases, but this was also often noticed before the antitoxin had been used at all, and it was unaccompanied by any symptoms referable to interference with renal function. A rash had been noted in three cases. While recognizing that it was possible that the greatly diminished death-rate might be due to an unusually favorable epidemic, it was pointed out that the cases treated had been very severe in their clinical features.

Dr. Gayton, Medical Superintendent, Northwestern Fever Hospital, quoted figures, from which he drew the following deductions:

1. That the death-rates are slightly lower, although

the reduction is not uniform, as it ought to be, if a single favorable factor was at work, for in the youngest ages the death-rate has been largely increased.

2. That the reduction in the death-rate may be explained equally by the generally less virulent form of the disease, as by any assumption that it is due to a change in treatment—in a word, the death-rate does not show that large, undoubted, and regular diminution that it should do if some novel and potent means of combating the poison was at work.

His own experience and that of his colleagues might be summed up thus: Those cases that under the old treatment would probably have died, still were fatal under the new. Those which might get better recovered in about the same proportion, whilst the mild cases improved no more rapidly—indeed rather the contrary, considering the frequency of the incidence of rashes, than those without it.

Dr. Foord Caiger, Medical Superintendent of Southwestern Fever Hospital, based his remarks on two hundred and thirty cases of diphtheria, treated by serum. His experience justified him in placing to the credit of the remedy the following facts:

1. It leads to a more rapid separation of the diphtheritic exudation. As a consequence of this not only is the patient's distress greatly lessened, but the chance of later paralysis, including that dread complication, cardiac failure, is considerably reduced.

2. Another symptom, which seems to be directly controlled by antitoxin, is rhinorrhœa. That profuse, acid, sero-purulent discharge from the nose, which is such a marked feature of the naso-faucial attack, is frequently almost entirely checked after twenty-four to forty-eight hours' treatment with the serum, and the relief from distress which the patient experiences after the patency of his nasal passages has been restored to him, is most striking.

3. The most marked benefit which is found to attend the use of antitoxin is seen in the relief of laryngeal obstruction. It would seem that not only does the membrane loosen more rapidly, but the swelling and secretion of the laryngeal mucous membrane quickly subside as well, and further tend to relieve the stridor. The effect of using antitoxin has been to reduce very considerably the number of tracheotomies.

After a review of the ill effects produced by antitoxin, which he classed as evanescent rashes, short intervals of pyrexia, abscess, and arthritis, he concludes as follows:

In comparing the ill effects with the good effects of the remedy, I have no hesitation in saying that they are very unimportant, but, as they furnish undoubted evidence of some abnormal pathological process going on in the body, I should not advise the irresponsible employment of antitoxin in those mild cases, for which nothing more is required than local irrigation of the throat, coupled with a suitable diet; but in cases of diphtheria, which are at all severe, or in those, about the severity of which I were in any manner of doubt, my present decision would be to pin my faith upon antitoxin.

Peron and Meslay: A Case of Osteomalacia in a Girl Fifteen Years Old. (*Rev. Mens. des Mal. de l'Enf.*, Tome xiii., No. iv.)

The patient was the fifth child of an alcoholic father and a healthy mother. Puny at birth, she was breast fed for twenty-two months and throve well. Dentition was normal; blepharitis and measles were the only illnesses she ever had until, at thirteen, she began to complain of pains in the legs near the knees, especially after walking. Genu valgum developed, and double osteotomy was performed. Soon afterward the arms became weak; some movements, especially with the shoulder muscles, were difficult, while motion in the forearm remained normal. A right hyper-scoliosis made rapid progress in three months. Owing to an hypertrophy of all the tissues of the terminal phalanges, the fingers became markedly and peculiarly clubbed. The legs became flexed upon the thighs at an obtuse angle, extension being impossible. All the nails remained normal.

One and one-half years after the onset, the child was well grown, the general health good, no sensory, reflex nor vaso-motor disturbances present. The head, neck, and face showed no abnormality. The entire thorax was twisted to the right, kyphosis marked, ribs beaded, sternum and scapulæ projecting, pelvis normal. Muscles of the shoulders were atrophied, and all motion limited and painful. The forearms and hands were emaciated, although their motion remained good. Complete extension of the knees was impossible; the femora appeared large; the adductor muscles were much atrophied; but the joints were normal: The tibiæ were curved, and the leg muscles atrophied so that all motion of the lower extremities was impaired. Severe pains in the bones of the thighs and legs were complained of. While in the hospital she sustained fractures of both thighs. All the deformities progressed rapidly, and finally the only motion remaining possible was of the head, forearms and hands. Attempts to move the lower extremities were intensely painful. Two years after the beginning of the disease the general health began to fail; respiration was painful, and diaphragmatic only. Death was due to marasmus. The muscles of the neck and of deglutition were involved several months before she died.

The urine contained a diminished amount of mineral and organic matter per litre, with the exception of the phosphates only, which were normal. No albumen nor sugar was present, but a small quantity of oxalate of lime, and some bile pigments.

At the autopsy the viscera presented no lesions beyond some congestion of the lungs and kidneys. The bodies of the vertebrae were spongy and friable in the centre, surrounded by a completely softened periphery which enclosed a small semi-circle of intact bone tissue. These changes were most marked in the sacrum, and in the dorsal vertebrae concerned in the scoliosis; toward the occiput the vertebrae was harder in consistency. The cranial bones were triple the normal in thickness, and so much softened as to be readily cut with scissors. Clavicles and ribs were very fragile, and some of the latter were fractured. All articulations were normal. The long bones showed thickening of the periosteum, and a great reduction in the quantity of bony tissue, the centre being filled with a soft, friable, vascular mass. Near the extremities a mass of spongy substance resembling decalcified bone existed below the pseudo-cartilage which made up the epiphyses, and these were much increased in size.

The tibiæ showed these changes, *i. e.*, atrophy in mass and pseudo-cartilaginous production, most markedly. They were the first bones to be involved. The bones of the forearm, though clinically affected late, also presented a marked reduction in size, the diaphysis in some places having the thickness of a match.

The authors call attention to the youth of the patient; the rapid course; the symmetrical deformities of the fingers; the muscular atrophy, and the classical post-mortem lesions of osteomalacia with their habitual localization.

Bezy & Iversenc: Three Cases of Pseudo-Membranous Stomatitis in Nurselings. (*Rev. des Mal. de l'Enf.* Tome xiii., No. 6.)

Case I. Infant infected by its mother, who had an abscess of the breast. The child, five months old, had athrepsia, was partly nursed and partly very badly fed. Some diarrhœa and eczema were present, and refusal to take the bottle or the breast, the mouth being held open. A patch of pseudo-membrane was found on the soft palate, about half a centimeter in breadth.

The mother had had a collection of pus in the breast for some time, in the region of the nipple.

Cultures made from the fluid expressed through the the nipple, and from the child's patch in the mouth gave similar results—streptococci growing in chains of twenty to thirty elements. The child recovered, but died of athrepsia later.

Case II. Nurse infected by the infant. A child of nineteen months, nursed and fed, had vomiting and diarrhœa. Small, discreet patches of pseudo-membrane appeared on the lower lip, spreading to the tongue, lips and soft palate. The mother nursed him for eleven days, when she was compelled to stop on account of abscesses in both breasts, with lymphangitis.

Cultures revealed the presence of staphylococci in the pus from the breast, and also in the membrane from the baby's mouth. Recovery was complete.

Case III. Child one month old, was nursed by her tubercular mother who had an abscess of the breast. The tongue was covered with small, white patches, and at the sides of the uvula were two ulcers corresponding to the pterygoidian placques of Parrot. In a few days a pseudo-membranous exudate united the two patches, and covered the soft palate.

Staphylococci were cultivated from the mouth of the child, but cultures from the mother's milk were negative in their results. Buccal antisepsis resulted in cure.

Caille, Augustus: Tapping the Vertebral Canal. (*New York Medical Journal.* Vol. xli., No. 24.)

This operation performed for the purpose of diagnosis was first suggested by Quincke at a meeting of the

German Medical Congress in 1891, but has apparently received no attention in this country. There is an open communication between the subarachnoid space surrounding the spinal cord and the ventricles of the brain. The puncture is made between the third and fourth or the fourth and fifth lumbar vertebræ. The terminal cone of the cord is situated at the level of the first lumbar vertebræ, and if a puncture is made below this point it is not likely that any of the divergent strands of the cauda equina will be injured. In semi-comatose children and in adults narcosis is not required, and aspiration is not necessary, because the liquor cerebro-spinalis will ooze out.

Quincke first tapped in order to relieve pressure symptoms in acute hydrocephalus, and recommended the procedure as a means of distinguishing between serous, purulent, and tubercular meningitis.

The author's personal experience is limited to four cases. In the first two, in children three and five years of age respectively, suffering from tubercular meningitis, tubercle bacilli were found sparingly in the flaky sediment of the liquor cerebro-spinalis. The third case was under observation at the time of the report. A child of nine months, with the symptoms of tubercular meningitis, was admitted in convulsions and tapped. Twenty-five cubic centimetres of a clear and limpid liquid were removed.

The procedure in tapping is as follows: After locating the third and fourth lumbar vertebræ, place the middle finger of the left hand upon the spinous process of the third and the index-finger on the spinous process of the fourth lumbar vertebra, pressing firmly upon the bone. Now mark with the nail of the right index finger the interspace between the two fixed points and puncture precisely in the median line with a large-sized hopodermic needle attached to its syringe, which is merely used as a handle and not for the purpose of aspirating. No undue force should be used in propelling the needle forward; it readily enters the spinal canal and can be moved about freely if it is in the right place. The syringe may now be unscrewed from the needle, which remains *in situ* and permits the fluid to escape into a sterilized bottle for subsequent examination. Tapping the spine may safely be employed to relieve pressure symptoms in various forms of disease. In chronic hydrocephalus it is a safer procedure than tapping the cranium. For diagnostic purposes the value of this procedure is firmly established.

Dessau, S. Henry: Value of Inspection in the Diseases of Children. (*New York Medical Times, 1895.* Vol. xxiii., No. 5.)

This article is designed to call attention to the great advantage which may be derived from inspection in making a diagnosis in the diseases affecting children. This is an element of physical examination which has been much neglected. Superficial examination is often made and often proves misleading. While certain conditions may be determined entirely by this means, it is only one element in most cases, and should not be relied upon alone. The infant should be entirely stripped of all clothing. The signs furnished by inspection should be regarded as guides only to be followed by further investigation. The position of the child teaches much, while in older children the walk should be observed. An infant frequently moves its hand in the direction of its source of pain—to the throat, the ear, or the head. Investigation of the thorax gives valuable information regarding rickets, malnutrition, asthma, or thoracic troubles. The movements of the thorax are of especial value, indicating certain pulmonary diseases. The abdomen is also a region of great importance. It is enlarged out of proportion to the size of the body in rickets, struma, and chronic intestinal indigestion; the latter being a disorder common in over-fed children. The abdomen is also enlarged in typhoid fever, peritonitis, and ascites, the walls being also tense, in contradistinction to the flabby character in the first named conditions. In ascites, besides being large and tense, the abdomen is pear-shaped, and the superficial veins over the upper part are enlarged. An enlarged liver, spleen, or a hydronephrosis, and in fact any tumor of the abdominal cavity may cause an enlarged abdomen. A retracted or "scaphoid belly" denotes extreme malnutrition.

The head presents many points of interest for inspection. The small head or microcephalic, denotes a possibility of backward mental development approaching idiocy; the large head with bulging fontanelles hydrocephalus; with depressed fontanelles, more likely rickets; the flat crown or box-shaped head is characteristic of rickets, the circular crown of hydrocephalus. The depressed condition of the anterior fontanelle is a sign of impaired nutrition, and with an enlarged size for age, is a frequent mark of rickets. The protruding or elevated fontanelle occurs in hydrocephalus and inflammation of the meninges of the brain.

The expression of the face frequently furnishes important indications of disease, as do also the teeth and mouth.

In summing up the value of inspection in pediatrics, it will be easily seen that its greatest importance is in the study of the diseases of infancy, for here we can gain no information from the patient, and expertness in observation and thorough physical examination is the only means at our disposal of becoming successful diagnosticians.

Morax: Diphtheritic Conjunctivitis; Its Treatment with Antitoxine Serum. (*Annales D'Oculistique,* Vol. cxiii., No. 3.)

Four cases are given in detail, two of which, in children aged respectively thirteen and ten months, were complicated by diphtheria of the nose or throat. Ten cubic centimetres of serum were injected at one dose, and the following day the false membranes were easily detached and the firmly closed lids could be opened. Recovery was complete on the fourth day, no other treatment being employed except a boracic acid wash. Another case, in a boy of six years, was accompanied by nasal and laryngeal diphtheria, following measles. The conjunctival diphtheria disappeared in three days; but the general condition necessitated a further injection of serum, of which sixty-five c. c. were given, in three doses. A collyrium of silver nitrate was used twice. The fourth case involved the nose and both eyes of a child thirteen months old. An injection of ten c. c. of serum produced an improvement for twenty-four hours, followed by a relapse. Cure resulted in forty-eight hours after a second injection.

In all these cases the diagnosis was confirmed bacteriologically.

The writer concludes that in cases where there are false membranes and a purulent secretion, and where the diagnosis of diphtheria is not firmly established, it will be well to use silver nitrate in addition to the serum injection. If, however, bacteriological examination establishes the diagnosis of ocular diphtheria, injection of serum without local treatment is sufficient to bring about recovery.

II.—SURGERY.

Cautley, Edmund: Empyema in Children. (*International Medical Magazine*, 1895, Vol. iv., No. 5.)

The author of this paper bases his study on an analysis of eighty-six cases occurring in children under twelve years of age. The average age was about four and one-half years. The boys numbered forty-four and the girls forty. In forty-one cases the disease was on the right side, and in forty-three on the left. Two were bilateral. Nine pointed before operation. Fourteen died—16.6 per cent. The cases are divided into four groups, according to the treatment adopted.

Group one: Four cases receiving no medical treatment. One died. In two, pus discharged through the lung, with much subsequent contraction of the side. Group two: treated by aspiration only. Aspiration was performed eighteen times in twelve cases. They all recovered, but in no case was perfect recovery reported. Twenty-eight cases were at first aspirated, but required other treatment. Group three: treated by incision and drainage. Thirty-five cases were thus treated, with a mortality of twenty per cent. The mortality was greatest in the youngest children. Group four: treated by resection and drainage. Thirty-three cases were thus treated, with a mortality of eighteen per cent. Of the five patients under two years who were thus treated, not less than four died, and of the eleven cases under three years, five died.

It is in cases left entirely to nature that we most commonly find the characteristic sequelæ, such as chronic sinus, deformed chest, shrunken side, depressed shoulder, curvature of the spine, fibroid changes in the lungs, and tuberculosis. The same results occasionally follow in cases treated on approved methods, but of long continuance before reaching the surgeon's hands. The author believes that small purulent effusions sometimes are absorbed, but is positive that such a result is very uncertain, and that the risk incurred by a policy of non-intervention far outweighs the risk of surgical interference. The only safe treatment for empyema in children is to evacuate the pus. He believes that absorption after aspiration is more probable when pneumococci only are present than when streptococci are found. If one aspiration does not result in cure, he is strongly opposed to repeating the operation.

The two methods of drainage commonly employed are

(1) incision and (2) resection, either of which may be supplemented by irrigation.

Advantages claimed for Resection over Simple Incision—1. That better drainage is secured; 2, that the boundaries of the cavity can be explored and all loose adhesions broken down; 3, that there is less danger of hemorrhage; 4, that the chances of a perfect cure are better; 5, that recovery is more rapid.

Advantages claimed for Incision over Resection—1. That the operation is simpler and more quickly performed; 2, that the shock is less; 3, that there is less risk of pyæmia, the medullary cavity of a rib not being laid open; 4, that drainage can be secured quite efficiently, and that consequently a more severe operation is not necessary. The author believes that the assertion that the chances of a perfect cure are better in cases treated by resection is not supported by experience. More of these cases thus treated were discharged with a sinus than those treated by incision. Early contraction of the side is more likely to follow resection than incision; it is not a sequel to be aimed at.

Indications for Resection—1. When the ribs are so close together that it is impossible to drain the cavity without. This is a condition that very rarely occurs in children, and is only likely to be found in long-standing cases.

2. When drainage is found subsequently to the simpler operation to be imperfect, the indications being a high temperature and an offensive discharge.

3. When the lung has re-expanded and the chest-wall contracted, and yet the sinus does not close. Resection of portions of several ribs is generally required in such cases.

The site of operation must depend upon the situation of the fluid. It is usually advisable to make it as nearly as possible over the centre of the dull area. In a general effusion, the fifth space in the mid-axillary line is usually most convenient for both patient and surgeon, and the most satisfactory for drainage. An incision in any space below the seventh on the right side and the eighth on the left entails a certain amount of risk to the diaphragm.

The management of the tube is a matter of great importance to the success of the operation. The opening should be regarded purely as a temporary exit for the fluid. The fluid soon—sometimes in two or three days—becomes sero-purulent, and even serous, and then it rapidly becomes scanty. It is then time to remove the tube. If left beyond this time, it will keep up irritation, and will prolong the discharge. The only rule that can be laid down is to remove the tube early—as soon as the discharge has become serous and scanty. Irrigation, he believes, is only permissible in cases of fetid effusion, an exceedingly rare primary condition in children.

Causes of Bad Results—No matter what treatment is adopted, there will always be a small proportion of cases which do not recover, or are left with a chronic sinus, or develop complications. The chief causes of such unsatisfactory results are as follows:

1. Prolonged duration of the effusion previous to evacuation. In such cases the lung is so bound down by adhesions and so altered in structure by the ingrowth of fibroid tissue from the pleura that it is unable to expand. Such a condition is not a necessary sequence of long-continued effusion; in some of these cases, rapid and complete expansion ensues.
2. Partial discharge through the lung. If there is a fairly free communitation with a bronchus, the lung cannot expand.
3. Syncope during the operation or on subsequent irrigation.
4. Pyæmia.
5. Various complications, chiefly broncho-pneumonia or tuberculosis.

In cases of double effusion, the following rules are proposed:

1. It is better to aspirate first on both sides, in order to diminish the quantity of fluid and relieve the heart from the encumbrance to its action. Next day, operate on one side, and a few days to a week later operate on the other. The left side should be chosen for the first operation, and local, rather than general, anæsthesia employed.
2. Cases of general effusion on one side and localized effusion on the other. Evacuate the general effusion first and repeat the operation on the other side a few days later.
3. Cases of double localized effusion. Simultaneous drainage may be adopted, though it is a wise precaution to wait a few days between the two operations.

General Summary—1. When pus is found to be present in the pleural cavity, the proper treatment is to remove it.

2. The best method to adopt for its removal is simple incision and drainage.

3. The best site for the operation is the fifth space in the mid-axillary line.
4. Irrigation is unadvisable, and is indicated only in cases of fetid effusion.
5. Exploration and scraping of the cavity are not necessary.
6. Resection of rib is practically never necessary in children as a primary procedure to procure efficient drainage.
7. Resection of rib may be necessary to secure the closure of the sinus, subsequently, by allowing the chest wall to fall in.
8. Collapse of the chest wall is not a result to be desired in the early stages of the treatment.
9. Rapid and complete expansion of the lung is the great object of treatment.
10. The tube must be removed early.

Young, James K.: Spina Bifida Cured by Excision of Sac. (*Therapeutic Gazette*, 1895, xix, No. iv.)

The patient was a boy one year old. The tumor occupied the most common seat—the lumbo-sacral region—and was of the type of meningocele or sac without nerve elements. The mass was large, and could be moved more easily to the left than to the right, but showed no distinct pedicle. It was firm and covered with normal skin, and was unchanged during crying. The incision was made over the tumor and the sac was dissected out. The pedicle was ligated with a zigzag suture, cut short, and the stump edges were secured by uninterrupted suture. The technique was of the most strict aseptic variety. The case made a perfect and uninterrupted recovery.

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The Prevention of Tuberculosis—Sir Benjamin Ward Richardson gives the following sanitary decalogue: First, pure air for breathing. Second, active exercise, outdoor as much as possible. Third, uniformity of climate. Fourth, dress that will sustain uniformity of warmth. Fifth, careful regulation of the hours of rest by the sunlight. Sixth, outdoor occupation. Seventh, amusements that favor muscular development and sustain healthy respiration. Eighth, cleanliness in the broadest sense. Ninth, the avoidance of the ill-effects of cold. Tenth, an ample diet, with a full proportion of the respiratory foods.—*Asclepiad.*

SCIENTIFIC BULLETIN NO. 1,

HEALTH DEPARTMENT, CITY OF NEW YORK.

REPORT ON BACTERIOLOGICAL INVESTIGATIONS AND DIAGNOSIS OF DIPHTHERIA, FROM MAY 4, 1893, TO MAY 4, 1894.

BY HERMAN M. BIGGS, M.D., W. H. PARK, M.D., AND ALFRED L. BEEBE, PH.B.

The first twenty-three pages of this bulletin are devoted to a history of the system inaugurated by the Board of Health for making bacteriological investigations of all suspected cases of diphtheria, together with a minute description of the technique and laboratory methods employed. Although a large portion of the work of the laboratory consists of the routine examination of cultures received each day, extensive original investigations have been made. Many of these are of extreme interest, and were made for the purpose of answering several important questions. We reproduce only an abstract of the *conclusions* derived from the original work.

1. *How much reliance can be placed on the bacteriological diagnosis made from the examination of a culture inoculated with the exudations in the throat of a case of suspected diphtheria?*

The examination can be thoroughly relied on in cases where there is visible membrane in the throat, if the culture is made during the period in which the membrane is forming, and no antiseptic has lately been applied. In cases in which the disease is confined to the larynx or bronchi, surprisingly accurate results can be obtained, but in certain cases no diphtheria bacilli will be found in the first culture, and yet will be abundantly present in later ones. Absolute reliance for a diagnosis cannot be placed on a negative result in a single culture from the pharynx in purely laryngeal cases. In nasal diphtheria a negative result may be obtained from a culture made from the throat, but the bacilli may be found in cultures from the nose.

2. *If in cultures bacilli are found which possess the shape, size, and staining characteristics of the diphtheria bacillus, can they, without further cultural or animal experiments, be considered as virulent diphtheria bacilli?*

We find that the bacilli obtained from twenty cases of suspected diphtheria proved in every case to be virulent, and in all but three fully so. We must conclude, that for diagnostic purposes, all bacilli found in throat inflammations suspected to be diphtheria, which possess the morphological and cultural characteristics of the Loeffler bacilli, must be regarded as virulent, unless animal inoculations prove otherwise.

3. *What is the period of time during which virulent diphtheria bacilli remain in the throat after the disappearance of the exudate or pseudo-membrane?*

Completed observations have been made in 605 cases of diphtheria as to the length of time during which the Loeffler bacilli persist. In 304 of these, the diphtheria bacilli disappeared within three days after the complete disappearance of the exudate; in 301 they persisted for a longer time, viz.: in 176 cases, for seven days; in 64, for twelve days; in 36, for fifteen days; in 12, for three weeks; in 4, for four weeks; in 4, for five weeks, and in 2, for nine weeks after the exudate had completely disappeared.

4. *(a) What relation has the pseudo and the non-virulent diphtheria bacillus to the true virulent bacillus? (b) Are virulent diphtheria bacilli ever present in the throats of healthy persons who have been in contact with diphtheria?*

In order to study these various bacilli, cultures were made upon blood serum from 330 healthy throats. When any of the varieties of bacilli described above were discovered in the cultures, they were isolated, and in the great majority of cases, tested as to their virulence on guinea pigs. The results of these studies are given in the tables below. The bacilli formed may be divided into three groups:

(1) Bacilli identical with the Loeffler diphtheria bacillus in growth, producing acid in bouillon, but having no virulence.

(2) Bacilli not having all the characteristics of the Loeffler bacillus in growth, producing alkali in bouillon, and having no virulence.

(3) Virulent Loeffler diphtheria bacilli, characteristic in growth, producing acid in bouillon.

Two hundred and eighty of these were children under twelve, while fifty were adults. In twenty-four of these characteristic, but non-virulent bacilli were found, and in only nine of the twenty-four were there present noticeable pathological changes in the throat. Virulent diphtheria bacilli were found in eight of the 330 cases. They were, in all probability, derived from mild cases of unrecognized diphtheria, or from healthy children who were carrying the bacilli in their throats.

We have found that children, and to a less extent adults, who are brought in direct contact with true cases of diphtheria, very often receive the diphtheria bacilli into their throats, and that these bacilli may persist and develop in these throats for days or weeks. In some cases we have found that true diphtheria followed the appearance of the bacilli in the respiratory passage, while in others no disease developed. The examination of the throats of 330 healthy persons in whom no contact with diphtheria was known, revealed the presence of virulent bacilli in but eight persons, two of whom later developed diphtheria. We must conclude, then, that virulent diphtheria bacilli are to be found in the throats of a small proportion of healthy persons throughout the city, and that they have been derived either directly from diphtheria cases or from those who have been in contact with them. The examination of the throats of the 330 healthy persons showed that in twenty-four bacilli existed in every way identical with the Loeffler bacillus, except that they were not virulent in animals. As the bacilli in cases of true diphtheria are known to gradually lose their virulence, and as this loss of virulence can be caused artificially, it seems to the writers that these bacilli, characteristic except as to virulence, should be regarded as true diphtheria bacilli which have lost their virulence.

5. *To what degree is pseudo-diphtheria communicable?*

We find, in 113 cases of false or pseudo-diphtheria, occurring in 100 families, that fourteen occurred at the same time with or shortly after some other case, and that it is possible to assume the disease had been directly communicated to them. In nine of the 100 families, more than one case developed. In these, as in the other 350 cases of pseudo-diphtheria investigated, it did not seem secondary cases were any less liable to occur where the primary case was isolated than when it was not. In this connection, we must remember mild throat inflammations are very frequent, especially in the early spring months, and that it is quite possible where two cases occurred in a family together, or within a short time of each other, that they have both been due to exposure to some common conditions, rather than to direct transmission.

CONCLUSIONS.

1. All inflammation of the mucous membrane due to the diphtheria bacillus of Loeffler should be included under the name "diphtheria." An acute hyperæmia of the mucous membrane caused by the Loeffler bacilli is considered as truly diphtheria as an inflammation with pseudo-membrane or exudate, and a case in which the lesions are confined to the larynx or bronchi, as truly diphtheria as one in which the tonsils and pharynx are involved.

2. Under pseudo-diphtheria should be included all inflammations of the mucous membranes, which simulate true diphtheria, and which are due to streptococci, or other cocci.

3. The name "croup" should be regarded as a term merely indicating that the location of the pseudo-membranous or exudative lesion is in the larynx, and not as describing the nature of the disease. In New York city at the present time, eighty per cent. of the cases of "croup" are diphtheria.

4. The examination of cultures under the conditions insisted on by the Department form a reliable method of determining whether the diphtheria bacillus is present or absent in a throat.

5. Virulent diphtheria bacilli were apparently in about one per cent. of the healthy throats in New York city at the time of these examinations. Diphtheria, however, was rather prevalent in the city at this time. Most of these had been in direct contact with cases of diphtheria. Very many of those whose throats contain the virulent bacilli never develop diphtheria. We must, therefore, conclude that the members of a household in which a case of diphtheria exists should be regarded as sources of danger, unless cultures from their throats show the absence of diphtheria bacilli.

6. The bacilli found in the original serum cultures, which in appearance and staining are identical with the typical Loeffler diphtheria bacillus, may be regarded, for diagnostic purposes, as virulent diphtheria bacilli, if the cultures have been made either from throats containing exudate, or from those of persons who have been in con-

tact with true diphtheria, for investigation has shown that over ninety-five per cent. of such bacilli are virulent.

7. All bacilli which are identical with the virulent Loeffler diphtheria bacillus, morphologically, biologically, and in staining by reagents, should be classed with the diphtheria bacilli, whether they have much, little, or no viruleuce when tested in guinea pigs. Bacilli which have entirely lost their virulence, rarely, if ever, regain it. They probably are incapable of causing diphtheria, for the twenty-four cases in which they were found by us never developed any lesions, nor were they the origin of any case of diphtheria, so far as could be ascertained.

8. The name pseudo-diphtheria bacillus should be regarded as applying to those bacilli found in the throat which, though resembling the diphtheria bacilli in many respects, yet differ constantly from them. These bacilli are rather short, and are more uniform in size and shape than the Loeffler bacillus. They stain, as a rule, equally throughout with the alkaline methyl blue solution and produce alkali in their growth in bouillon. They are found in about one per cent. of the healthy throats in New York city, and seem to have no connection with diphtheria. They are never virulent.

9. One or more varieties, both of streptococci and other forms of cocci, exist in the great majority, and possibly in all, of the healthy throats in New York city. Cultures from the throats in cases of pseudo-diphtheria contain more cocci, especially more streptococci, than those from healthy throats, but otherwise do not seem to differ.

10. The investigations of the Health Department have given striking evidence of the marked difference in mortality between true and pseudo-diphtheria, for while it was twenty-seven per cent. in diphtheria, it was under two per cent. in pseudo-diphtheria.

11. The combined clinical and bacteriological investigation of over 5,000 cases has demonstrated clearly the fact, that many of the less characteristic cases of diphtheria and pseudo-diphtheria are so similar in appearance, symptoms, and duration, that it is impossible to separate them, except by bacteriological examinations.

12. Persons who have suffered from diphtheria should be kept isolated until cultures prove the bacilli have disappeared from the throat, for not only are the bacilli

which persist in the throat virulent, but they are not infrequently the cause of diphtheria in others. Where cultures cannot be made, isolation should be continued for at least three weeks after the disappearance of the membrane.

13. In pharyngeal cases in which thorough irrigation of the nostrils and throat with 1-4000 bichloride of mercury solution has been practiced every few hours, the bacilli have not remained in the throat for as long a time after the complete disappearance of the pseudo-membrane as when no antiseptic has been employed. Other cleansing and antiseptic solutions are also useful.

14. Inflammations of the mucous membrane due to streptococci, either alone or associated with other cocci, are usually mild in character.

15. While the streptococci, and perhaps other forms of cocci, may be considered as the primary etiological factor in pseudo-diphtheria, yet, in the majority of cases, at least, certain predisposing factors, such as exposure to cold or other deleterious influences, or the presence of certain infectious diseases, appear to be of great importance in determining the occurrence of the disease.

16. The slight mortality and the usual mildness of the cases of pseudo-diphtheria do not warrant us in enforcing isolation.

With the results of these investigations before us, we can appreciate the difficulty of exterminating diphtheria from a city like New York. On the one hand, we have cases of diphtheria scattered all through the city, many of which are so mild as to be unrecognized, and, on the other hand, we have the crowded tenements, with their ignorant and shifting population, where proper isolation of the patient from other members of the family, or of the family from other inmates of the building, is usually impossible, unless harsher measures are adopted than are now customary. With stricter isolation of patients and intelligent and systematic supervision of the schools and tenements, we can certainly reduce the number of cases of diphtheria in the city, but the total extermination of the disease, under the existing condition of life here, does not seem probable, unless we can acquire new means to combat the disease.

ARCHIVES OF PEDIATRICS.

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Original Communications.

TWO CASES OF INFECTION OF THE LUNGS PROCEEDING FROM THE PLEURA.

(From the Sears pathological laboratory of the Harvard Medical School.)

BY A. H. WENTWORTH, M.D.,

Assistant in Diseases in Children in the Harvard Medical School; Out-Patient Physician to the Children's Hospital; Assistant Visiting Physician to the Infants' Hospital.

CASE I.—Erysipelas, with extension through the chest walls into the pleura and lungs, followed by general streptococcus infection.

Case of a male infant, one month old, who entered the Infants' Hospital March 23, 1895, and died nine days later.

History—No history could be obtained, except that the child had been delivered by forceps, fed on milk and water, and had never been strong.

Physical Examination—Fairly well-developed and nourished. Possibly less than one month old. Feeble cry; respiration superficial, apparently from weakness. There was a papular efflorescence distributed over the body and head, and some desquamation on the body. There was an indurated area in the skin on the right side of the neck, posterior to and on a level with the lower part of the ear, over the trapezius muscle. This area was about four c.m. in diameter and of a square shape. It was slightly movable on the underlying tissue, and was not tender or painful. On the upper part there was a small crust which looked as if there had been an abrasion. On the left side of the head, between the parietal eminence and the ear, there was evidence of another slight abrasion. These two places probably corresponded to where forceps was applied. There was purulent secretion in both eyes. The ears and nose were negative. The umbilicus was excoriated and showed a slight bloody discharge which was offensive. All the sutures were open. Lungs: There was normal resonance over both lungs; the respiratory sounds were faint and were accompanied by medium and fine moist râles, with inspiration. Heart: Dulness extended from the third rib to the fourth space on the left of the sternum, and from the left border of the sternum to the mammary line. The sounds were feeble. The liver border was felt three c.m. below the edge of the ribs in the mammary line on the right side. The spleen was not palpable. The abdomen was negative. Weight, 2.840 kilograms; temperature normal.

Clinical History—The infant was given modified milk and brandy, and a corrosive sublimate dressing, 1–3,000, was applied to the umbilicus. The condition of the infant remained about the same until the fourth day, when the temperature, towards evening, rose to 38.4° C. On the following morning a line of redness was noticed surrounding the indurated area in the neck. This redness spread rapidly over the neck and up on the right side of the face. In the afternoon there was well-marked induration and a sharply-defined border, and the temperature had risen to 39.20° C. During the next two days the swelling and redness extended to the left side of the face and down on the chest as far as the nipples, down the arms to just below the elbows, and on the back to the inferior angles of the scapulæ. The temperature remained between 39.° and 39.7° C. The pulse was weak and rapid, and the general condition worse. On the fourth day of the disease the efflorescence had faded from the right side of face, and in other places was purplish red and had not extended. The temperature fell to 36.2 C., and the child died toward evening.

Autopsy by Dr. F. B. Mallory—Right side of face somewhat indurated, but about normal color. Left side of face deeply injected and swollen. The swelling extended up on the forehead to the hair, and from the nose to the left ear and down on the neck. Back of right ear, a brawny area four c.m. in diameter, of a dark red color, which on section showed an opaque, "cheesy," white mass, with sharply circumscribed borders, 1 c.m. in thickness. Beneath this mass the tissue was œdematous and translucent. The lower cervical glands were swollen and deeply injected. Left lung: Anterior border, pale in color and distended with air. The remainder of the lung showed varying areas of atelectasis and slightly areated tissue. Right lung: Distended, firmer than normal; anterior two-thirds of a reddish-grey color and in places quite translucent. The margin of the lobes rather sharply defined in yellowish-white. The anterior borders of middle and upper lobes alone contained much air. Dependent portions of lung were much darker in color; dense, with sharply defined lobules; a few filled with air. Heart: Normal. Spleen: slightly enlarged, purplish color, fairly firm. On section, the follicles not visible; pulp but little, if any, increased. A secondary spleen was attached to under surface of stomach, near large spleen. Kidneys: Supra-renal capsules and pancreas normal. Liver: About normal size, somewhat injected and contained a small cyst, about one c.m. in diameter, with solid contents. Umbilicus: Apparently normal. The umbilical arteries almost down to the bladder were green in color, slightly distended and filled with brownish-yellow purulent fluid. Umbilical vein normal.

Cultures were made from all the organs on blood serum, and showed the presence of streptococci, pure culture, in all of them.

Microscopical Examination—Sections of the skin, lungs, kidneys, liver and spleen were stained by Weigert's fibrin stain, and the results were as follows: Sections of the lungs showed foci of atelectasis, varying in extent, in various places. The alveoli in relation to these were emphysematous. The bronchi were everywhere normal and contained a small amount of albuminous exudation, coagulated by the hardening agent. The alveoli of the lung, apart from the emphysematous places, were either normal or contained a small amount of albuminous exudation, mingled with cast-off epithelial cells and a few leucocytes.

The most interesting condition of the lungs was the interstitial tissue. There was some increase in thickness of the alveolar walls, but the greatest increase was around the larger blood-vessels of the lungs. Here there was a marked increase in thickness, due to œdematous infiltration, but there appeared to be little or no increase in the number of cells. There was not only a general œdematous infiltration of the tissue, but the lymphatics everywhere were enormously dilated. The lymphatics contained large masses of streptococci, which extended from them into the surrounding œdematous connective tissue. Here and there small groups of streptococci were found in the alveoli of the lung, but none were found in the bronchi or in the blood-vessels. The pleura was also œdematous and contained, both on the surface, in the tissue and in the dilated lymphatics, immense numbers of streptococci. In some places a continuous extension of the streptococci could be traced from the pleura into the connective tissue of the lung. The condition of atelectasis was probably congenital, since there was no bronchitis or other condition which could have caused it. Skin: Sections of the skin showed the lymphatics everywhere filled with streptococci. The fibres of the tissue were pressed apart by the albuminous exudation, but there was little or no evidence of cellular infiltration. The kidneys, liver and spleen showed small masses of streptococci here and there in the blood-vessels. In the liver, in addition, they were found in the perivascular tissue.

This case is interesting from the mode of extension of the organisms. There can be little doubt that the condition in the lungs was due to extension of the organisms through the chest-walls to the pleura and from there into the lungs. The condition found in the lungs was perfectly analogous to that found in the skin. The streptococci were only found in the lymphatics and in the œdematous tissue around them. The absence of active inflammatory conditions as shown by the absence of cellular infiltration, is interesting, and may possibly be attributable to the wide extent of the process and the low grade of vitality of the child. It is to be regretted that no examination of the blood was made during life; but as far as the examination of the tissues would lead us to judge, there was no leucocytosis.

Concerning the primary infection, it is possible that it took place from the abrasion on the neck produced by the forceps, or from the umbilicus. If by the umbilicus, it is possible that a general infection may have preceded the development of the erysipelas, the organisms being conveyed to the lesions on the scalp by the blood, where they found a place of minor resistance. It is more probable that it started in the lesion in the neck.

CASE II.—A case of staphylococcus pneumonia, following empyema.

The chief interest in this case lies in the rarity of cases of pneumonia produced by the staphylococcus pyogenes aureus alone and in the unusual mode of infection.

The patient, a female child of two and one-half years, was brought to me at the out-patient department of the Children's Hospital on November 19, 1894, and was sent into the hospital at once, her condition being so critical as to preclude the idea of recovery. Her parents were ignorant, and the only history obtainable was that she had been ill for ten days. The following examination was made an hour later:

The child was well developed and fairly nourished. There was marked pallor of skin with grayish tinge, and considerable dyspnœa, with some retraction of the thorax at the lower part. The alæ nasi moved with respiration; the lips were slightly cyanotic; the veins of the neck were not distended. The head was slightly retracted and there was some stupor, but the patient was roused by examination. The pupils were equal, moderately dilated and reacted to light. The extremities were warm, the nails pink, and the blood returned quickly after pressure. The pulse was rapid (208), small and compressible and not intermittent; the respiration 60 to 70 per minute and noisy. There were tracheal râles. The glands of the neck were not enlarged; the tongue was coated; the tonsils moderately hypertrophied and the pharynx reddened, with considerable mucous on it. The ears were negative; there was no œdema of extremities. The child was inclined to lie on the right side. The heart's impulse was diffuse and feeble in the fifth space, mammary line on the left side The sounds were scarcely audible because of œdema of the left lung. Percussion over lower half of sternum and cardiac area was tympanitic; upper half of sternum somewhat dull.

Lungs. *Inspection*—Both sides of the chest moved with respiration, the right side somewhat less than the left. There was no bulging of the right side, and the lower intercostal spaces were not obliterated, although there was less retraction with respiration than on the left side.

Percussion—Over the left side of the chest the resonance seemed slightly increased, front and back. Over the right side dulness began at the clavicle in front and merged into flatness below; the same condition existed in the right back.

Auscultation—Over the left side of the chest, front and back, there were coarse and medium moist râles. The respiration was superficial, and inspiration and expiration were about equal. Over the right side of the chest, in front, there was broncho-vesicular respiration from the clavicle to the fourth rib. Over the fourth rib and outwards to axilla there was bronchial breathing. Over the right back there was broncho-vesicular respiration from the apex downwards. The respiratory sounds were distant over the whole right side, but were fainter at the base. There were coarse moist râles throughout, but with a more resonant character than on the left side. The voice sounds were like those heard over consolidated lung, but were distant. The liver was palpable below the border of the ribs in the mammary line on the right side as low as the umbilicus. The edge was rounded and the surface smooth. The spleen was not palpable; the abdomen was slightly distended and tympanitic. The temperature in the rectum was 39.1° C. at entrance, and rose shortly afterward to 40.5° C. Subcutaneous injections of brandy, ether and carbonate of ammonia were given, but without perceptible effect on the pulse.

The physical signs seemed to indicate consolidation of the lung with fluid in the pleural cavity, because it seemed improbable that fluid alone could cause dulness as high as the clavicle without displacement of the heart and obliteration of the intercostal spaces. Aspiration in the eighth space posterior axillary line withdrew 300. c.c. of bloody serum. The fluid was opaque and of a brownish-red color. The subcutaneous injections of brandy and carbonate of ammonia were repeated, together with three minims of digitalis tincture. The pulse improved somewhat after this and was slower (180).

Milk was given with brandy by the mouth, and an enema of water and brandy, which was not retained.

Examination of the chest after aspiration showed an improvement in resonance. Over the upper right front as low as the third rib there was still dulness, but not as marked as before. Below this the chest was resonant with a tympanitic quality. Over the right back, from the spine of the scapula downwards, there was less dulness.

The after treatment consisted of an ounce of milk every hour. Tincture of digitalis ♏ iii. and brandy ʒ ii. every three hours and aromatic spirits of ammonia between.

On the following day the child's condition had improved somewhat. The heart was stronger and there was less œdema of the left lung. She had taken nourishment and treatment well. There was considerable stupor and but little cyanosis. The temperature varied from 40° to 41° C.

On the 21st, the day of her death, the examination was as follows: Over the left side of the chest the respiratory sounds were harsh, with but very few râles. Percussion was resonant. Over the right side of the chest the percussion was the same as two days before. Below the clavicle, at its outer third and extending downwards and outwards to the axilla, there was an area over which were heard fine and medium moist râles. The respiratory sounds were harsh and distant, with prolonged expiration; no bronchial breathing anywhere. The breathing heard over the back was faint and vesicular. The liver was palpable about midway between the level of the umbilicus and the ribs in the mammary line. The stupor was more marked. There was slight cyanosis. The respiration was rapid and superficial; pupils dilated and reacted slowly; skin gray; tendency to rigidity of the extremities and twitching of the hands and fingers. The condition remained about the same until her death. The urine was not obtained.

The examination of the aspirated fluid, made by Dr.

James H. Wright an hour after its withdrawal, showed a pure culture of staphylococcus pyogenes aureus. Cultures made by Dr. Wright from the lungs, liver, spleen and kidneys, showed a general infection with staphylococcus pyogenes aureus. No other organism was found.

Autopsy by Dr. F. B. Mallory—Well developed and nourished. Abdomen on a level with thorax; muscles of good color; considerable subcutaneous fat tissue. Brain showed nothing beyond some œdema. Heart-valves, cavities and muscular substance not abnormal. Lungs: Left showed an irregular area in lower border of lower lobe which did not contain air and over which the pleura was dull. This area was considerably denser than the rest of the lung. The right pleural cavity contained about 50 c.c. of rather dark, bloody fluid which contained many soft, yellowish floculi. Pleural surfaces, both parietal and visceral, were covered with a yellowish-grey, elastic, roughened membrane from 1 to 2 m.m. in thickness. The basis of this membrane was very soft and friable. The upper lobe of the lung was distended and solidified. The middle and lower lobes were compressed and contained no air. On section, the surface showed several dark, reddish-brown areas, somewhat resembling hemorrhagic infarction, but the surface appeared rather more granular. Dark bands of similar color formed a very coarse mesh-work throughout the rest of the section. Inside these bands the tissue was yellow and soft, like thick pus. The lung tissue seemed entirely broken down. The pericardium contained about 10 c.c. of clear fluid, in which were a few fibrinous floculi. On the pericardium in places were a few small, thin layers of fibrin. The spleen was not enlarged; the capsule wrinkled; the color pale. On section, the color was decidedly pale; the trabeculæ quite distinct. The liver was injected, on section normal. Kidneys: The capsule peeled off readily. Here and there on the surface were small greyish specks, surrounded by a reddened area. On section, the cortex was grey and not as transparent as normal. Stomach and intestines normal; pancreas normal. Mesenteric lymph-glands swollen and grey on section.

Anatomical Diagnosis—Acute pericarditis (very slight); acute suppurative broncho-pneumonia; hemorrhagic, purulent fibrinous pleurisy; cloudy swelling of the kidneys.

Microscopical Examination—Sections were made from the lung after hardening in alcohol. The right lung was hardened in toto, and sections were made from various places. These sections were stained by methelene blue, followed by eosin; by Weigert's fibrin stain, in conjunction with carmine, and by hemotoxylin eosin. The pleura was everywhere greatly thickened. In places there were large masses of fibrin directly on the pleura, and in other places there was a new formation of tissue beneath the fibrin and replacing it. Large masses of organisms were found either on the surface of the pleura or in the midst of the fibrin. In the lung tissue of the upper lobe were areas of consolidation and softening. These areas were tolerably well circumscribed, even with the naked eye, bands of cellular infiltration proceeding from and continuous with the pleura could be seen extending into the lung. In the consolidated portions of the lung the consolidation was due to masses of leucocytes within the alveoli and to hemorrhage. In the softened areas the whole tissue was filled up with leucocytes, and no remains of lung tissue could be seen. A large number of these areas of softening were found to be directly continuous with lines of cellular infiltration which proceeded from the pleura. In these lines of cellular infiltration and in the abscesses there were large masses of staphylococci. The areas of softening in all cases showed an interesting relation with the bronchi. In places the softening had extended to the bronchi and opened directly into them. This was always found to be on one side of a bronchus. The cellular infiltration and softening in all cases appeared to have extended from the periphery of the lobule to the bronchus. In the vicinity of the abscesses the bronchi were occluded by masses of leucocytes. Apart from the abscesses, the bronchi were but little involved in the process. The lines of cellular infiltration extending down from the pleura apparently passed between the lobules of the lung. This peripheral involvement with extension into the centre offers some analogy to some of the forms of pneumonia in cattle. In the exudation there was a small quantity of fibrin. In the areas where softening had commenced this was found only in the periphery. There was also a small quantity of fibrin in the hemorrhagic areas and in the lines of infiltration extending from the pleura. The softened areas gave the impression that there had been a greater amount of fibrin which had afterward disappeared in the process of softening. In the lower lobes of the right lung only an atelectatic condition was found, due to compression of the lung by the pleural exudation. In the lower lobe of the left lung there were foci of beginning broncho-pneumonia. The evidence that the condition in the upper lobe was due to an extension of the infection from the pleura and not from the bronchi was shown by the extensive organization on the pleura, proving it to be of older date, and that although the softened areas communicated with the bronchi in many places, only one side of a bronchus was ever effected. The extension from the pleura was marked by fibrinous and cellular exudation and masses of bacteria into the interlobular tissue. In various places in the lung hyaline thrombi were found in the blood-vessels, and similar thrombi were found in the kidneys in the vessels of the glomeruli. It is known that the formation of these hyaline masses in the vessels may take place in staphylococcus septicæmia, produced experimentally in rabbits.

There were a number of interesting clinical points in this case, among which may be mentioned the absence of bronchial breathing over the consolidated upper lobe, probably due, in part at least, to the exudation which filled many of the bronchi. The resemblance to croupons-pneumonia, as shown by the involvement of a single lobe and the complication with empyema (the broncho-pneumonia in the other lung was just beginning at the time of death). The diagnosis of staphylococcus aureus in the exudation from the pleura would lead one to give a more unfavorable prognosis than if Frankel's diplococcus were found. The hemorrhagic character of the pleurisy modifies the old view that cases of hemorrhagic pleurisy are almost invariably due to cancer or tuberculosis. (I have since seen another case which was hemorrhagic, caused by the staphylococcus pyogenes aureus.) The peculiar leaden color of the skin and the rapid pulse, etc., as indications of sepsis, need only be mentioned. It is worth remembering that much of the solidification can be caused by hemorrhage into the alveoli, and that the combination of exudation in some places and hemorrhage in others may give to a lobular affection the physical signs of a lobar. The aspiration of thin fluid is no evidence that there is not a marked cellular and fibrinous exudation on the pleural surfaces, so that the treatment should be operative, and I should be inclined to wash out the pleural cavity, at least once, to try and avoid general infection in those cases in which I found pathogenic organisms.

The work on these cases was done by me in the Sears pathological laboratory of the Harvard Medical School, under the supervision of Professor William T. Councilman; and I desire, in concluding, to express my thanks to him and to his assistants, Drs. F. B. Mallory and James H. Wright, for their assistance in preparing this paper.

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Condensed Milks—The commission appointed to examine into the milk supply of London have discovered that in the case of condensed milk by far the greater number of brands are prepared entirely from skimmed milk. In all, seventeen brands of milk were examined by Dr. Dyer and Mr. Cassal. Out of this number fourteen were found to be prepared from skimmed milk, and showed an average of 0.72 per cent. of fat. Three brands prepared partly from skimmed milk show an average of 3-14 per cent. of fat. Genuine condensed milk, prepared from milk in its entirety, should contain from ten to twelve per cent. of fat. In the present state of the law, as interpreted by the judicial authorities, condensed skimmed milk, that is to say, milk deprived of one of its chief constituents, may lawfully be labelled "condensed milk," although when sold uncondensed it must be distinctly stated at the time that it is skimmed milk.—*British Medical Journal.*

MORPHINISM IN THE YOUNG.*

BY J. B. MATTISON, M.D.

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Morphinism in the young is rare. This statement refers to recorded cases. Obersteiner, Zambaco, Jennings and others, abroad, who have had experience with the morphine disease, told me they had not met it. My own experience, compassing the care of many hundred cases of morphinism, has not covered one in a child.

The literature of the subject is meagre. I have consulted dozens of books on diseases of children to find only a single reference to it—that, Meadows' work; and careful search through medical journals, at home and abroad, per *Index Medicus* and elsewhere—disclosed only five papers—Carson, 1885; Amabile, 1886; Earle, 1887; Kiernan, 1891; Fisher, 1894. Calkins, Hubbard and Erlenmeyer refer to it—mainly hereditary cases.

Morphinism in children may be congenital or acquired. The latter is more often noted, because many cases of the former are overlooked, not being recognized by the doctor, who—unaware of morphinism in the mother—fails to appreciate the import of certain symptoms in the babe soon after birth, and the supply of narcotic nutriment (so to speak), as well as other nourishment—for the lacteal secretion is usually suspended—being cut off, the child speedily falls into a fatal collapse.

One of the most notable cases of this kind ever cited was by Dr. Frank B. Earle, before the Chicago Medical Society, in December 1887. In the preceding October, he attended at the birth of a ten-pound girl, whose mother—a morphinist—seemed specially solicitous regarding her babe. Enquiry revealed the fact that three children died soon after birth—the first in two and a half days, the second in three days, and the third in four days. In this case, on the third day, the child became sleepless, pale and prostrate. Twelve hours after was found pulseless and cyanotic, five minutes later died. The mother had taken 8 to 14 grains of morphia daily, commencing soon after marriage.

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* Read before the Section on Pediatrics, New York Academy of Medicine, October 10, 1895.

Most cases of acquired morphinism in children are met with in general practice — being noted by the family doctor and by him often treated with success. Those presented in the paper—now first published—are from that source, and to the medical men who have given them to me, I tender my thankful appreciation.

CASE 1. Dr. R. E. Howard. Twins; three months old, healthy, save being fretful and restless at night. By medical advice they were given Papine, in four drop doses.—Papine is the product of a Western drug house, and contains one-eighth of a grain of morphia to the drachm.—One month after each child was getting one drachm—one eighth of a grain of morphine—at 5 P. M., daily. Four weeks later I was consulted, and advised abrupt withdrawal. This was done, but for seven days and nights they were the most nervous little creatures I ever saw, did not sleep more than ten minutes at a time and cried almost incessantly. At the end of a week they went to sleep from sheer exhaustion, and later did well.

CASE 2. Dr. J. H. Cuffman. Infant; three weeks old, was given two drops laudanum three times daily, for relief of colic. Two weeks later, dose was increased to three drops four times a day. This increase was continued till at the age of seven weeks, babe was getting six drops of laudanum six times a day. I ordered it decreased one drop daily and gave chloral and bromide of sodium when needed, and in seven weeks quit the opiate. The child steadily improved and regained perfect health.

CASE 3. Dr. F. I. Given. Boy, of twelve years, was given ten drops of tincture of opium to ease the pain from an injured scalp. When the wound healed, the opiate need had become fixed, and during one year the amount increased to twenty-five drops each night. Without it he becomes restless, sleepless and hard to control. The boy is pale and frail, has the facial look of an old man, is listless, with little care for play. Owing to a structural cardiac lesion no treatment of his opium disease has been given.

CASE 4. Dr. C. H. Lovewell. In the spring of 1872 I was called to see a sick child and found this case. Babe, about seven months old, wrinkled and shriveled like a person of ninety, with a strange, solemn manner and stare. Inquiry elicited the fact that it was a first-born; normal in size and appearance at birth, grew fat and seemed in perfect health till it was four months old, when it began to reject food and to fret and cry. To quiet this, paregoric was given, but it soon needed so much that laudanum was used and this increased to an average of a teaspoonful every three hours, so that, at time of my call, this little seven months' creature, was getting an ounce of laudanum each day. It weighed about seven pounds, had a big belly, with arms and legs that were a wonderful sight—simply bone covered loosely by skin that would form a sort of "fringe," when the limb was extended. The head was of usual size, though it seemed much larger; but the neck muscles were so slight they would not support it. Nursing limited to one-eighth of usual amount, every third hour, stopped the vomiting. The laudanum was reduced one drop each dose, with directions not to give till certain symptoms ensued. No medicine was given. Food was retained, the skin filled out, and at the end of a month, the babe was plump and happy. The opiate was entirely and permanently ended, and the babe developed into a robust boy—now a voter.

In reviewing cases of morphinism in children, one cannot fail to note, with surprise, the facility with which the disease is created,—and its rapid growth as shown by an increase of the opiate daily given. As regards the latter point, my experience among hundreds of opium habitués presents no such notable case as the one last cited, where a child seven months old was getting, at the end of three months, six grains of morphine a day! That case is unique.

Incident to the rise and progress of this disease in children, one point of interest and importance presents. There are those in the profession who think that the main genetic factor in morphinism is mere moral obliquity on the part of the patient: simply a vicious desire for the pleasure—so called—of the poppy. I have long held, and still hold, increasingly so—see two papers, "The Ethics of Opium Habitués,"—reprint if desired—that this opinion, as related to most habitués of the better class, is a mistaken one: that these patients do not take opium from an innate propensity to evil, but because of a physical necessity. What becomes of the opposite argument in cases such as we have cited? And what more needed to prove it unsound? Surely, this sort of "vicious desire" does not obtain among babies! Surely, "evil propensity" along this line does not play a part in patients six months old! No, no. A physical need creates, and—made greater by the narcotic, for it grows by what it feeds on—a physical need continues. In the immense majority of cases, among young and old, this may be accepted as an etiological fact.

So much as to the cause of morphinism in the young. What the consequence? Speedy decline and death. This the rule; exceptions noted. Details need not detain us. Nutrition centres bear the brunt of opiate excess, which tends to marasmic decay. En passant, it may be noted that the symptoms of this disease in the young when the opiate is withheld or withdrawn, prove, beyond question, its somatic status, and that psychic factors have no place —either in causation or continuance. They furnish, too, still further disproof of its "vice" origin, for, obviously, neither weak nor perverted will to cause, nor strong volition to cure, which, according to some—grossly ignorant of facts—is all that is needed—can, in infantile cases, possibly obtain.

The prognosis of morphinism in the young is good. Every case, unconnected with structural lesion, or if nutrition be not too greatly damaged, and if given proper care, can be cured.

The treatment should be slow opiate withdrawal, with such roborant regime as will best tend to pristine health. Under no condition, save very limited taking, or some other quite beyond control, should the opium quitting be abruptly complete. The latter plan in the adult—a *method monstrous, brutal, mentioned only to be denounced*—not infrequently causes fatal collapse: a peril much more likely in the delicate organism of the young.

Mr. Chairman, in closing this paper, I cannot refrain from expressing my conviction that morphinism in children is far more prevalent than the paucity of recorded cases implies, and has a much larger influence on infantile mortality than vital statistics attest. In the lax condition of things now existing as to supervision of the manufacture and sale of the many nostrums lauded for relief of the painful, spasmodic diseases of child-life; in the certainty that most, if not all of these mixtures contain opium in some form; in the fact that mothers and nurses, ignorant or careless or culpable, give, all too often, these insidious disturbers of infantile health; and in the facility with which the disease can be begun, is to be found the reason for my belief in a wide-spread prevalence of morphinism among the young.

As a factor in the death-rate, I believe many cases are overlooked by the doctor, because no thought being given to the use of opium in parent or child, no query is made of the mother or nurse regarding it; and the signs of morphinism being masked by—or mistaken for—other symptoms, and—the needful opiate being unwittingly withheld, the little patient, deprived of a vital support, falls into fatal collapse, or becomes an easier victim to other disease.

If my belief along these lines be well founded, certain preventive measures to better the situation are suggested. They are—Instruction by the doctor to mothers and nurses of the risk in giving any form of opium to the young; National or State control of all proprietary medicines, compelling their makers to place the formula on every box or bottle, so that "he who runs may read;" careful inquiry, when called to a sick child, as to opium taking in any form by the mother, before or after the birth of her babe; and as to its giving, in any guise, to the child.

Prudent forethought, with proper care, will go far to lessen this one of the ills to which infant life is heir.

PROSPECT PLACE NEAR PROSPECT PARK.

CASES OF HYPERPYREXIA.*

BY HENRY DWIGHT CHAPIN, M.D.

New York.

The unstable condition of the heat-regulating centres in early life renders hyperpyrexia at this time a common symptom. Attention is here called to a form of excessive temperature that occasionally ensues in connection with intestinal indigestion and fermentation. Dr. E. Centanni (*Deutsche Med. Wochen.*, Feb. 22d, 1894), calls attention to a very high fever which may be produced through non-pathogenic bacteria, for instance, by eating rotten food, the disintegration of necrotic parts, and through stagnant secretions in gastro-intestinal disturbances. The author states that the first studies upon bacterial fever (Traube and Gscheidlen) were made upon the products of decomposition, and that with different kinds of bacteria the pyrotoxic power does not stand in ratio to the pathogenic power. The bacterial fever is produced by a general intoxication with a poison (pyrotoxina bacteria), which is formed inside of the bacteria, and which distinguishes itself from the better-known bacterial poisons (ptomaines, enzyme, toxalbumen,) through its own properties. Dr. Centanni found, in a series of experiments, that injections of pyrotoxin were constantly followed by diarrhœa, the intestinal tract being much affected with the symptoms of fever. Upon section and a study of the anatomical changes, the bowel was filled with fluid feces and mucus, while hyperæmic vessels were present, and great swelling of Peyer's patches. The temperature was first low, then went very high, and finally comes down slowly to normal.

Bessie G., 7 months, was admitted to the Babies' Ward, June 11th, 1894, for diarrhœa. She had been well until eight days before, when she was seized with vomiting and refused nourishment. The bowels became loose, there being several green, watery, curdy stools in the twenty-four hours. She did not rest, and cried constantly. The temperature on admission was 99° F. but in a few hours it suddenly rose to 105° F., but soon dropped to $101\frac{2}{5}$° F. The following day the temperature rose at 8 P.M. to $105\frac{1}{5}$° F., but dropped in an hour to 100° F. During this time there was no disturbance elsewhere in the body than in the intestinal canal. She improved under careful dieting and treatment, and did not have much temperature until the 17th, when the fever suddenly rose from 99° F. to 105° F., but dropped in two hours to 98° F. On the 24th, she was discharged, as the temperature had been about normal for several days, and the bowel in fair condition, with from three to five stools daily. On June 25th, she was brought back to the hospital on account of a very restless night, with constant crying. I suspected she had been carelessly fed, as a woman took her to board, but did not have a chance to inspect any of the discharges. The temperature at noon on admission was $98\frac{2}{5}$° F., but it rose steadily, until at 9.30 P.M. the thermometer in the rectum registered 110.4° F. A careful physical examination showed no local disturbance elsewhere than in the bowel. At 10.30 P.M., the temperature was 109° F., when the baby died. No autopsy allowed.

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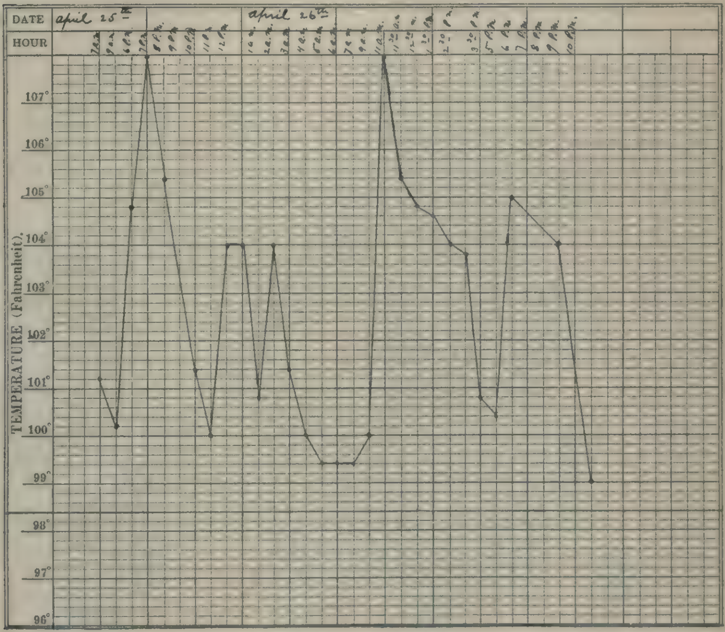
* Read before the American Pediatric Society, Virginia Hot Springs, May 27, 1895.

Geo. S., 5 months, was admitted June 26th, 1894, at 4 P.M., with a temperature of $107\frac{2}{5}$° F. and pulse 216. He had been well until two days ago, when he was placed in a nursery. Great restlessness ensued, and several greenish stools. The baby was in a condition of tetany, with opisthotonos, legs stiff, and feet extended. There was tonic contraction of the muscles of the arms, hands, and fingers. The fontanelle was depressed, and the pupils reacted but slightly to light. The baby died in two hours, with a temperature of 102° F. The autopsy showed the heart, lungs, kidneys, liver, and spleen to be normal. The only lesion found was well-marked enlargement and inflammation of Peyer's patches in the large intestine.

Anna S., 8 months, was admitted April 24, '95, with symptoms of laryngismus stridulus. She had been constipated, always crying with apparent distress upon movement of the bowels. Upon the following day she cried a great deal, did not take food well, and the temperature rose to 108° F., followed by two convulsions. The temperature chart for two days is shown, as the fever again rose to 108° F. She had an irregular and not high temperature, with intestinal indigestion until May 15th, when the fever suddenly rose to $106\frac{4}{5}$° F. In four hours it dropped to $98\frac{3}{5}$° F., and remained down for two days, when she was removed from the hospital.

In the cases here cited, and in not a few similar ones that I have seen, the hyperpyrexia evidently came from causes within the intestinal canal, probably from absorption of pyrotoxin developed from bacteria. In a majority of cases of sudden and extreme rise of temperature, the cause will be found in the digestive tract. The treatment must consist in a speedy clearing out of the bowel, cutting off fermentable food, and a thorough application of cold. Convulsions or coma are apt to ensue if the excessive temperature is not quickly reduced, and free stimulation will be required. Infants with rickets are especially liable to develop unusual temperatures. In most cases I have seen of the latter, there have been appreciable symptoms of rickets present.



DISCUSSION.

Dr. A. Seibert: I can record a case of hyperpyrexia in an infant in the child of one of the gynecologists of New York. When four months old, the child suffered from indigestion. In the evening I was called, when both the father and myself measured the temperature as 107½°. I concluded it was due to absorption from the alimentary canal, and used a stomach tube to remove the contents of the stomach. In three-quarters of an hour, the temperature had fallen to 102° without bathing.

Dr. Augustus Caillé: I wish to add to Dr. Chapin's remarks that the child with a temperature of 108° became infected while temporarily absent from our wards. The rise in temperature was directly due to infection from impure milk. When properly cared for, the temperature at once dropped as low as 96°, thus showing a range of 12° in a rachitic and ill-nourished infant, with no ill results following.

Dr. William P. Watson: Four weeks ago, I saw a case of marked intestinal sepsis in an infant ten months old. It had suffered with athrepsia since birth, being fed at the breast during the first few weeks, and then on cow's milk prepared in various ways, together with numerous proprietary foods. A wet-nurse was finally obtained. The temperature had ranged three or four degrees above normal for several days before I saw it in consultation, when it was 105°. It was very much emaciated, the eyes were sunken, the fontanelle depressed, and it was exceedingly restless. There were frequent passages, which were thin and very offensive. It vomited everything taken into the stomach. There was no evidence of disease of the head, chest, or abdomen. I suggested the use of a wine-glassful of hot water every fifteen minutes, and an ounce of hot salt water (half drachm to one pint) after each movement, and in twelve hours afterward it was put on a mixture of milk, cream, and water, peptonized with the peptogenic milk powder, which it retained. Within forty-eight hours, the vomiting, purging, temperature, and restlessness disappeared, and the infant has since improved daily.

Dr. A. Jacobi: I take it for granted that the cases reported were well taken care of in the wards, and do not understand why the temperatures of the babies living under improved circumstances should rise and fall always from the same alleged cause. It struck me that part of those temperatures might have been explained differently.

Dr. H. D. Chapin: The cases I reported were all rickety and therefore had unstable nervous systems. The child which Dr. Caillé refers to was boarded out for a while, and came back with a high temperature. It had been carelessly fed. One other case was brought in with symptoms of fermentation and high temperature. In the other case mentioned, the sterilizer was out of order and the milk was infected.

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Painful Temporary Paralyses in Children—Brunon (*Presse Méd.*) discusses painful temporary paralysis occurring in young children. Out of twenty-two cases two had paralysis of the lower extremities, all others having the arm only involved. In all there was an absolutely sudden onset, sometimes following the slightest traumatism; often no cause was observed. The paralysis is complete from the onset; amelioration is gradual. The child screams when the slightest examination is attempted. No anatomical lesion is found except occasional creaking of the joints. Recovery takes place in from twenty-four hours to a week. Most authors take the view that there are in such cases anatomical lesions such as subluxation, stretching or twisting of ligaments. Brunon believes with Chassaignac that in the cases in question any idea of fracture, dislocation, or tearing of ligaments may be dismissed, as no deformity, ecchymosis, or interrupted movement of joints can be found. A differential diagnosis is needed between this and the form of paralysis due to partial dislocation of the head of the radius, a pathognomonic sign of the latter being the impossibility of supination. In the cases under consideration all hung limply by the side and could be freely flexed, pronated or supinated. The initial lesion may be an injury to ligaments, but examination fails to localize the injury. Pain is general from shoulder to finger tips. The condition appears to be due to a reflex inhibitory action, of which other examples are numerous and which affords a rational explanation of the paralysis. An intellectual factor, the memory of the initial pain, explains the persistent crying of the child, the fear of being touched. There is no pain when the child is not handled. Much depends on the influence of suggestion made by those in charge of the child.—*British Medical Journal.*

AN ACUTE CONVULSIVE DISEASE IN AN INFANT SEVEN DAYS OLD, THE SYMPTOMS RESEMBLING TETANUS NEONATORUM WITH ABSENCE OF TRISMUS.*

BY IRVING M. SNOW, M.D.
Buffalo.

The patient, of German parentage, was born after a normal labor ; the presentation was cephalic ; no instruments were used. The baby, a boy, was of average weight, was not asphyxiated during parturition, urinated and had a stool in the first twenty-four hours of life. The umbilical was cut short and dressed with borated cotton. For the first six days of life all went well ; the child showed every evidence of a vigorous physique, nursed its mother and moved arms and legs in a natural manner. On the morning of the seventh day it seemed restless, took but little breast-milk and vomited once. About noon the nurse found the baby cyanosed and gasping for breath ; almost immediately it stiffened out in the attitude of opisthotonus, and respiration was for a moment arrested. By means of artificial respiration in a warm bath, breathing was re-established. Nevertheless, the eclampsia in a short time again recurred with slow, irregular respiration, retraction of the head, bending backward of the trunk. For two hours one convulsion followed another at short intervals At this time I saw the child. It was in a violent convulsion, and my colleague, Dr. M. A. Crockett, was making artificial respiration. After a few moments the spasm relaxed and the following condition was noted :

There was no jaundice ; the umbilicus was nearly healed ; there was no pus nor secretion on the scar ; the cord had fallen on the fifth day. The child was apathetic. There was general muscular relaxation ; the knee jerks were increased. Throughout the cardiac area the heart sounds were strong and clear ; there was no epigastric pulsation. Air entered all parts of the lungs ; the breath sounds were harsh and puerile ; there was no pulmonary collapse.

The pupils were dilated, with no response to light. The pulse was 160, strong and regular ; respiration, 30 ; temperature normal. There was no paralysis of any limb such as might be expected were the symptoms due to a meningeal hemorrhage. During the remainder of the child's life the convulsions returned every fifteen or twenty minutes. The first symptoms were invariably marked irregularity, slowing and then absolute arrest of respiration, the patient bent backwards in the position of opisthotonus. The arms and legs were not stiffened, nor was trismus or twitching observed about the face. In fact, the chief symptom of the malady was the sudden cessation of breathing every fifteen or twenty minutes. So long did these periods of apnœa last that we were afraid to allow them to terminate spontaneously. The pulse just before and for the first few moments of the spasm would be strong and regular, soon the rhythm would be disturbed and the pulsation would grow weaker. After witnessing several of these attacks it became evident that the only way to keep the child alive was by making artificial respiration most of the time. At times even this was unsuccessful, and we resorted to mouth to mouth insufflation. To prevent the child losing heat the room was kept very hot, and the patient lay in a warm bath. During the periods of apnœa the complexion was usually pale; only once did the infant become livid; occasionally in the attacks there was frothing at the mouth and bleeding from the nose. After the spasm was over the respiration would again become normal, thirty to thirty-six to the minute; the pulse from 160 to 180.

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*Read by title before the American Pediatric Society, Virginia Hot Springs, May 27, 1895.

At 3 P. M. the rectal temperature had risen to 101° F. Between 6 and 8 P. M. oxygen was continuously given. It always had the effect of strengthening the heart. From hour to hour the patient grew weaker. Twice the attempt was made to give nourishment by the mouth. Each time that milk or whiskey and water was administered the infant would stop breathing. So severe was one attack of apnœa after putting breast-milk in the mouth that we concluded that the pharyngeal reflex was abnormally increased from some bulbur lesion. The patient was given whiskey, oxygen and once one four-hundredth grain of strychnia hypodermically. At 2:30 A. M. the child died, there being continuous attacks of apnœa and opisthotonus. No autopsy was permitted. The parents were young and healthy. The puerperal period was short and without fever. There was no evidence of syphilis or tuberculosis in the family. The accoucheur was a conscientious aseptic surgeon. There was no inflammation or pus about the umbilicus. The symptoms were at first ascribed to meningeal hemorrhage, yet in the writer's opinion this may be absolutely excluded, as a meningeal hemorrhage extensive enough to destroy life would cause convulsions within forty-eight hours after birth, while the child remained in apparently perfect health until it was seven days old.

The illness was excessively acute, lasting only fourteen and one-half hours. The symptoms of apnœa and opisthotonus were evidently bulbur in origin. The respiratory pauses were due to spasm of the diaphragm and not to laryngismus, as air easily entered the lungs during artificial respiration. All fluids put into the mouth were regurgitated through the lips and nose ; as quickly as they touched the posterior pharyngeal wall a cessation of respiration took place.

An explanation of the symptoms is difficult, unless they be ascribed to tetanus neonatorum. The apnœa and opisthotonus appeared within forty-eight hours after the fall of the umbilical cord. This is the usual period of incubation of the tetanus bacillus, which in infants finds its avenue of invasion through the unhealed umbilical wound. It is known that the shorter the period of incubation is, as shown by the interval between the fall of the cord and the appearance of the symptoms, the more acute and quickly fatal is the disease. In the history of the acute convulsive disease we have recorded, apnœa impeding respiration and opisthotonus were the most prominent symptoms, trismus not being observed. Yet tetanus, even in infants, presents a varying clinical picture, and the cause of death is usually from respiratory embarrassment. There was no evidence of septicæmia, no inflammation or pus about the navel.

The bacillus of tetanus, an anærobe, is only found in the deeper portions of a wound, not in the blood. The constitutional symptoms of the disease are due to a ptomaine. The vehicle of contagion may have been in the dust of the dwelling, as the father, a silversmith, had nothing to do with garden earth or horses.

The bacillus of Nicolaier is indeed difficult to discover, even in typical cases. Of ten cases of tetanus neonatorum reported by Papiewski, of Graz, in nine no bacillus was found, and inoculations were negative.

Tetanus is rare in Western New York. No case of tetanus neonatorum has yet been recorded in the city of

Buffalo. Yet as few of the physicians of the city have any experience with the disease, and most of the profession are wholly unfamiliar with its symptomatology, it may happen that occasional cases occur, and are returned as dying from convulsions.

Inflammation of the Middle Ear of Infants—Dr. A. Hartman (*Deutsche Med. Wochenschrift*) gives the results of investigations of this subject in the Institute of Infectious Diseases, Berlin:

1. Post-mortem examinations and examinations of the ears of living children establish the fact that seventy-five per cent. suffer from inflammation of the middle ear.
2. Inflammation of the middle ear can nearly always be determined by an otoscopic examination.
3. The symptoms of the otitis media consist of restlessness, elevation of temperature and loss of weight. Sometimes these symptoms are not present.
4. Very often the symptoms of otitis media are connected with broncho-pneumonic processes. Probably both processes are due to the same process, *viz.*, aspiration.
5. Death can result in cases of otitis media, slow stone atrophy, or from an extension of the micro-organism into the cranial cavity (meningitis), or into the blood (septicemia).
6. The inflammation of the middle ears of infants must receive treatment suitable for the varying conditions.

Fracture of Humerus at Birth—Loviot (*Annales de Gynéc. et d'Obstét.*) relates a labor where the child's humerus was broken during delivery of the shoulders. A plaster splint was immediately applied. A few days later much callus had developed, and the arm soon became paralyzed. After a few more days the callus diminished and the member resumed its functions. Loviot attributes the paralysis to compression of the musculo-spiral nerve by the callus. Budin, in a discussion on this case, expressed a suspicion that the loss of power was due to pressure from the plaster of paris bandage. Charpentier stated that the paralyzed muscles became atrophied as a rule; hence this case had an unusually favorable termination.—*British Med. Jour.*

A CASE OF TETANUS NEONATORUM.*

BY WALTER LESTER CARR, M.D.

New York.

The following is the history of a case of tetanus which I saw with Dr. H. R. Purdy, of New York, to whom I am indebted for the notes :

On November 24th, 1894, a woman brought to the outdoor department of Bellevue Hospital her girl baby, aged ten days. The mother said that she and her husband were healthy. They had five other children, all well. Three years ago she lost a baby of nineteen months with "inward spasms." She had a baby boy who died five hours after birth. He did not have convulsions, but he was unable to open his mouth.

The family lived in a tenement-house on the east side of the city. The infant who was presented for treatment was born without difficulty. A midwife was in attendance. When five days old the mother noticed that the baby was unable to nurse. She said : "I could not make her take the nipple into her mouth. I had to force milk into her mouth with a spoon. The jaws could be opened just wide enough to get the tip of the spoon between them. The woman who confined me said that the baby must have sore throat, but she could not open the jaws to look at the throat. At times, when feeding, she would stiffen all over and get very red in the face. The cord came off the fourth day after birth. The navel looked red, but not sore." A day or two later a little matter, very thin, oozed from it.

When the infant was brought to Bellevue, on the fifth day of the illness, the jaws were immovably fixed, with the interspace between them described by the mother. The forearms were flexed. It was not until two days later that the infant showed evidences of tetanus other than trismus. The symptoms were no doubt aggravated by exposure to cold and wind while being brought to the dispensary. In addition to the symptoms already mentioned, the following were noted: The thumbs were drawn across the palms and clenched by the fingers; there were convulsive movements of the toes and at times of the whole body. The eyelids were tightly closed and the forehead wrinkled. All these symptoms were increased by any attempt to feed the baby. Deglutition was quite difficult. The temperature was 101° F. in the rectum. Emaciation was not marked, and for only two days was it necessary to resort to rectal alimentation. Without going into further details, it may be stated that the infant had all the alarming symptoms of tetanus and at times a temperature of 104.5° F.

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*Read by title before the American Pediatric Society, Virginia Hot Springs, May 27, 1895.

Treatment—The umbilicus, though it did not appear unhealthy, was kept clean with a solution of bichloride of mercury. The bowels were opened by calomel. A half-grain of chloral was given every two hours for two days; then an increase in the dose being necessary, the quantity was doubled. This was continued for two days, when two grains of bromide of soda was added to each dose. The combination acted better than the chloral alone. Whiskey, in five-drop doses, was administered every four hours. The treatment was pursued for fifteen days. The baby made a perfect recovery.

6 EAST FIFTY-EIGHTH STREET.

The Result of the Investigations of 500 cases of suspected diphtheria, examined at the bacteriological laboratory of the Harvard Medical School, proved conclusively the importance of a bacteriological investigation in cases of a doubtful nature. Of these 500 cases, diphtheria was found to exist in 133 instances, or 26.6 per cent. These investigations did not embrace the well-marked characteristic cases of diphtheria, but comprised those in which a diagnosis, so far as the clinical appearances were concerned, would have been impossible without a bacteriological examination.—*Boston Med. and Surg. Journal.*

A CASE OF CARDIAC ANOMALY.*

BY GEORGE N. ACKER, M.D.

Washington, D. C.

Maggie K., female, white, aged six years, entered the Children's Hospital on October 20, 1890. The father and mother were well. The mother had had seven children, all of them healthy with the exception of this one. At the request of Dr. Lamb, I questioned the mother closely about the first weeks of the pregnaney, as he thought that the anomaly "might be due to some particular trouble during the first two months of the fœtal life of this child, especially about the seventh week." She stated that the pregnancy was without any unusual symptoms. Also, in view of the abscess, I tried to get a history of ear trouble, but found that the child never had any ear disease and the hearing had always been good. The child was born "more dead than alive," and the physicians had great trouble in resuscitating her. She was of a blue color from birth. When three years old she had icterus as a complication of pertussis. Since then she has had a cough with some expectoration. She has frequently complained of pain in the region of the heart. For years she has had spells when she would appear as if dead. These occurred nearly every day, especially if excited or she had any sickness. She would sweat heavily after these attacks. In December, 1889, she had an attack of influenza, and since then has been subject to convulsions of an epileptiform nature. The mother describes the attacks as being attended with rigidity, eyes fixed and staring, with occasional frothing at the mouth and loss of consciousness. These convulsions came on daily, and were accompanied by involuntary evacuation of the feces. After the influenza she had about two dark blue pulmonary hemorrhages daily. She also passed blood by the bowels.

Present Condition.—Fairly well nourished. Marked blueness of skin, particularly around mouth and ends of fingers. The ends of the fingers and toes are clubbed. She is sluggish of movements and is slow in answering a question, but cannot be called dull. Respirations shallow and rapid. Broncho-vesicular breathing and a few râles anteriorly. Broncho-vesicular breathing posteriorly. Heart sounds normal, perhaps a little dull. Apex beat two inches below and one inch to the left of the nipple.

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* Read before the American Pediatric Society, Virginia Hot Springs, May 28, 1895.

October 23.—After a hard coughing spell to-day, during which the patient was of a dark blue color, she had an attack. Nothing was noticed except a marked cyanosis and hard, labored breathing. Muscular system was flaccid; no frothing at mouth. Pupils regular in size. For several hours afterwards she had a severe headache.

October 26.—Was removed from the hospital to-day. During her stay she had improved somewhat. She played with the other children and was cheerful.

December 4, 1890.—Child readmitted to the hospital. She has been growing worse since she left, the cyanosis being more marked.

January 10, 1891.—No change. Occasionally has attacks of dyspnœa, during which the cyanosis is greater and heart's action becomes weak, but she does not lose consciousness.

February 15.—Had an attack, during which the heart apparently failed to act and respiration nearly ceased. Hypodermics of whiskey and artificial respiration revived her.

May 10.—No change.

June 4.—Very rarely has an attack and always slight.

September 15.—Slight attacks after exertion. Is becoming weaker mentally. She will laugh in the most ridiculous manner at nothing.

October 18.—No attack of dyspnœa for a month. Is gaining rapidly in flesh.

October 30.—Condition unchanged.

November 14.—The child is doing well. She never exerts herself by running or violent play. Appetite good.

December 1.—Cyanosis gradually becoming less. A patch of tinea tonsurans (size of a quarter of dollar) appeared on the right forehead near the scalp. This yielded to treatment and disappeared in January, 1892.

February 13, 1892.—Rise in temperature and eruption of chicken-pox. This ran a favorable course.

April 29.—Had a slight fainting spell, with pain over the heart. Did not turn blue.

May 28.—Had two slight attacks during the week.

June 4.—Has slight attacks at intervals, but the general condition is much improved.

June 16.—Discharged at the request of her parents.

July 26, 1894.—The child readmitted to hospital. Since her discharge from the hospital she has remained well until four days ago. She was then taken with an attack in which she shook and trembled for about half an hour. Since then her left arm has been paralyzed. Yesterday her left leg became weak. She appears fairly well nourished. The mental condition is not good. The face and hands are very blue. Capillary circulation is sluggish. The first heart sound is prolonged and the second sound is dull. The lung sounds are clear. She is constipated. The tongue is coated. She vomits after eating. The ends of the fingers are much enlarged; the toes also to a less extent. There is no sensation or motion in the left arm. The sensation is almost intact in the left leg, but she cannot bear much weight on it when she walks, which she is able to do with the aid of others.

July 29.—Vomits occasionally about half an hour after taking milk. Appears languid. Voice feeble and plaintive. Is anxious to get out of bed.

July 30.—Condition unchanged.

August 5.—No change. She vomits several times daily. Complains that the food makes her sick.

August 6, 11 P.M.—When she was given milk it was noticed that she was specially dull and drowsy and that she took the milk with great difficulty. From that time she became more and more comatose.

August 7, 3 A.M.—In absolute coma. Dilated pupils. Stertorous breathing (Cheyne-Stokes) and slow pulse. Face of a deep purple color. The right pupil did not contract to light, but the left one contracted slightly and remained so, not dilating when the light was withdrawn. The muscles of forearm (flexors of hand) in a clonic spasmodic condition. The extensors of the forearm were in a spastic condition, so that the forearm was flexed with difficulty. Then there followed for half an hour contraction and relaxation of the muscles of the forearm.

11 A.M.—The breathing changed gradually into a more normal variety. The coma continued unchanged, except that she was sensible to the prick of a pin or tickling the sole of the foot, moving arm or leg under these conditions. As it was impossible for her to swallow anything, nutritive enemata have been given.

August 8.—Died at 4 A.M. Respiration very noisy as the end approached. Cessation of heart's action preceded that of respiration.

Post-mortem Examination.—At 12 noon, eight hours after death, rigor mortis well marked. Skin of a dark purplish color. No deformities. Much fat in the chest walls; omentum also contained fat. Blood flowing from the incisions of a dark, tarry color. Little fluid in the pleural cavities. Lungs appear almost black. The right lung was strongly adherent to the chest wall. Kidney and spleen enlarged and distended with blood. Vessels of the brain full of blood. There was a collection of grumous blood near the anterior part of the right temporo-sphenoidal lobe. Just back of this was an abscess containing greenish pus.

The brain, heart and lungs were sent to Dr. D. S. Lamb for examination.

REPORT OF DR. D. S. LAMB.

The heart and lungs were placed in my hands under circumstances requiring haste in dissection, to facilitate which the lungs were disconnected from the heart. This action was unfortunate as preventing the establishment beyond question of the source of blood supply to the lungs.

The malformation of the heart and great vessels consists in the following: Foramen ovale patulous and one-half inch in diameter.

Interventricular septum incomplete in upper part, where there is an opening one-half inch in diameter.

Pulmonary artery arises from the left ventricle in the usual aortic situation as a *cul-de-sac*, with one rudimentary valve. On the corresponding internal ventricular surface is a dimple. Repeated attempts failed to discover even the slightest communication with the artery.

The aorta arises from the conus arteriosus of the right ventricle. The ascending aorta is one inch in diameter; walls not abnormally thickened; valve segments of the usual thickness; right coronary opening large, left quite small. They opened respectively behind the right and posterior leaflets. From the upper curve of the transverse portion of the arch arise six branches, three large and three small. The innominate, left common carotid and left subclavian arteries are identified without difficulty; the remaining three vessels are situated immediately to the right and in front of the innominate. From their position and relative size I infer that the right one, the larger, and the left, the smaller, communicated respectively with the right and left lung, and I presume are non-obliterated fifth primitive aortic arches. The sixth vessel is the smallest and most obscure, and I can only conjecture as to its distribution. Whether the two vessels which, in my opinion, communicated with the lungs also communicated with the pulmonary arteries, is not now evident, but I think it probable.

The largest diameter of the trunk of the pulmonary is one-half inch. From the upper curve of its left division and just beyond the origin of the right division is a narrow vessel which connects with the branch of the aorta which I have suggested as passing to the left lung. This communicating vessel is undoubtedly the ductus arteriosus. It is patulous to a very limited extent at its pulmonary end; at its aortic end there is only a dimple and valve-like pad.

Both auriculo-ventricular openings are smaller than normal. The auricular cavities are of normal size; the walls of about normal thickness. Both ventricular walls are one-fourth inch thick. The right is, therefore, hypertrophied; the interventricular septum of normal thickness. Ventricular cavities are small.

It is to be regretted that at the time of removal of the specimens, the systemic arterial connections were not noticed, just as also it was unfortunate that the lungs were prematurely separated from the heart. The cause of the cyanosis was evidently the interauricular and interventricular commingling of the blood, the color of which must have been that of a mixture of arterial and venous blood. Altogether the heart is small for a child of ten years.

In view of the blind action of the pulmonary artery, both the systemic and pulmonary blood passed through the aorta, and the latter is accordingly increased in diameter. The blood returned from the lungs through the usual pulmonary veins, as also from the system by the cavæ.

The character of the malformation would suggest a disturbance of development at or before the seventh fœtal week. The closure of the origin of the pulmonary artery determined the patency of the auricular and ventricular septa. The transposition of the great vessels was caused by the deviation of the septa of the bulbous arteriosus.

Many cases of transposition of the great vessels conjoined with the heart have been reported. In a rapid review of a large number, the one which seems to most nearly approach in its entirety of anomalies to the present one, is that of Habershon in the Trans. Path. Soc., London, 1888, in which the child lived to the age of four years. The assemblage of anomalies in this present case is unique, and the prolongation of life to the age this child attained is quite unusual. Cases of malformation of heart in which abscess of a cerebral hemisphere has occurred usually have a history of disease of the corresponding ear.

Report of bacteriological examination by Dr. Walter Reed, Curator, Army Medical Museum: "As soon as Dr. Lamb brought the brain into my laboratory, I made cultures on agar plates, using all necessary precautions to avoid contamination, and afterwards made several coverslips from the greenish ropy contents of the abscess. I also inoculated a white mouse with a drop of the pus. Upon examining the coverslips, my attention was at once arrested by the very large number of diplococci which were present, many of these showing a capsular staining. The agar plates, three in number, were examined at the end of forty-eight hours, and showed only numerous colonies of the diplococcus lanceolatus. As soon as the organism was isolated in pure culture, I inoculated several white mice, using as much as ½ c.c. of a twenty-four-hour bouillon culture, but failed to obtain any pathogenic effects. The result of the animal inoculations shows that the organism had lost its virulency. As to the identity of the organism I have no doubt, since many of the pairs showed, both on coverslips taken from the abscess and from the agar plates, the well-known capsular staining characteristic of the diplococcus. Its lanceolate shape was also well marked."

PATENT VENTRICULAR SEPTUM IN A MAN OF TWENTY-NINE YEARS.*

BY A. JACOBI, M.D.

New York.

Sam. R., a Russian, twenty-six years, was taken suddenly ill on July 24, 1891. Dr. H. B. Adler found him gasping with dyspnoea, palpitations, pulse uncountable, generally livid, fingers and toes of deep blue color. There was a loud cardiac murmur, the character of which was not made out, and a fairly normal size of the heart. The patient stated that his lips and nails had been blue, more or less, for twelve or fourteen years. He was given digitalis and felt better after a very few days. Digitalis and potassium iodide were ordered afterwards.

The same medical gentleman saw him on the 12th of February, 1892. Digitalis and the iodide had not been taken. This attack was similar to the first. The heart beats could not be counted ; the impulse of the heart was plainly visible. A subcutaneous injection of morphia brought speedy relief ; digitalis was given in large doses ; and the patient went about his business twelve days after.

He got married the 9th of September, 1893, had a new attack on the 29th and was laid up ten days, and again on the 29th of December, from which it took him several weeks to recover.

He called on me the 2d of March, 1895. Was at that time twenty-nine years old. Living at a distance of three miles, he had to take street-cars and to walk part of the way. He rested an hour before he could see me ; had a pulse of 104, small, fairly compressible, complained of palpitation, which he said he had eight years, an occasional pain about his chest, and dyspnoea. His complexion was sallow, his lips blue, finger-nails blue and markedly clubbed, the toe-nails in a similar condition, but to a less degree. The veins of the surface, all visible veins in fact, including the jugular, *not dilated.* No jugular pulse. The cardiac dulness *not* at all, or but very little, *extended.* The vertical dimension is somewhat greater. Impulse very strong. There was a very loud systolic murmur (with but little diastolic) over and *about the ensiform process*, less marked at a distance of three centimetres. Its centre was the left margin of the lowest part of sternum.

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* Demonstrated before the American Pediatric Society, Hot Springs, Virginia, May 29, 1895.

Diagnosis: Incompetence of the tricuspid valve, patent ventricular septum, and probably congenital stenosis of pulmonary artery.

The patient presented himself again on the 19th of March. General condition not much changed. Under the influence of digitalis and potassium iodide his complaints were less urgent. It struck me there was a change in the murmur, it was decidedly musical, and I concluded some physical alteration must have taken place about the tricuspid valve or the patent septum. At that time his photograph was taken, after the outlines of the heart had been carefully marked with an ink pencil.

March 26th, I saw the patient in consultation with Dr. H. B. Adler. There had been pulmonary hemorrhages for some days; the blood was liquid, also at times coagulated. Disseminated rales over both lungs, particularly the upper lobes. Heart murmurs still musical, less so, however, than previously, may be either from diminished blood quantity, may be from further local changes. At all events, it appeared to us that a connection was to be found between the sudden origin of the musical sound and the presence of pulmonary hemorrhages which we took to be embolic. Temperature 101° F. No dulness.

April 8th, patient again seen in consultation. Hemorrhages had stopped a week ago. Rales quite extensive, both anteriorly and posteriorly. Bronchophony (more marked than actual bronchial respiration) over left upper lobe, anteriorly, and right infra scapular region. Some dulness on those places. Temperature reached 102° F. but once. A few days previously he complained a whole day of *pain over left ear which lasted a day.*

April 15th, consultation because of an incessant and very severe left supra-orbital neuralgia which had lasted five or six days. Pneumonia, hardly recognizable. No elevations of temperature. Occasional twitching of left side of face. Has appeared dull for some days, and more obstinate than usual. Answers questions slowly and rather stupidly. Complains of forgetting names. Aphasic, says spoon when he means bedpan, and makes other mistakes. Neuralgia was, therefore, taken to be of central origin, probably of embolic character, like the previous pneumonias.

April 19th, the patient was transferred to Mount Sinai Hospital, Dr. E. G. Janeway's service. From the hospital records kept by the senior assistant, I copy the following points relating to the history of the patient :

"Remnants of pneumonia still found, heart not enlarged, apex beat fifth space, irregular, systolic murmur at apex transmitted all over, soft and blowing, roughening of the second sound, loudest at fourth space, left. Right facial paralysis—uvula to the right. Temperature 99.2°; pulse 80; respiration 24.

"April 20th, temperature 98.6°; pulse 80; respiration 24. Slept well. Urine 1024, negative.

"April 21st, temperature never over 99.4°; slept well, stupor increasing, neck slightly rigid, areas of dim sensation on right side of face, right hand slightly paralyzed, but its sensitiveness not altered, legs normal—amnesic-aphasia.

"April 22d, temperature not above 98.6°; pulse 68 to 78; twitching of the muscles of left face, sleep good, incontinentia alvi.

"April 23d, temperature 98° to 98.4°; pulse 76 to 80; respiration 24; urine 1023, negative, involuntary. Stupor and rigidity of neck increasing.

"April 24th, 4 A.M., temperature 98°; pulse 78; respiration 24. Slept well till 5.35, became suddenly cyanotic, breathing once a minute. After subcutaneous injection of camphor, atropia and strychnia, respiration increased to four a minute—artificial respiration and oxygen were resorted to until death ensued at 6.15 A.M."

Autopsy the same day at 8 P.M., by the house physician, Dr. Yankauer, under the supervision of Dr. Mandlebaum, pathologist.

Lungs somewhat emphysematous, no pneumonia—some pleuritic adhesions—liver, spleen, kidneys, abdominal organs generally negative.

Heart slightly enlarged — normal pulmonary artery arises from body of right ventricle—no conus arteriosus. The caliber of the aorta is small, the innominata, carotis sinistra, and subclavia are all small and branch off before the arch is formed. Next to the subclavia sinistra there is a small artery directed upwards; probably a vertebral. The left ventricle is small, the right large with eccentric hypertrophy. The ventricular septum, upper part, is patent and admits readily of two fingers. Foramen ovale closed. No ductus Botalli perceptible. Tricuspid valve very much thickened all over and roughened. No recent endocarditis, no thrombi.

Dura mater normal, not adherent. No meningitis. On section of dura the brain bulges out. Brain very soft on left side, normal on right. Pus in posterior horn of left lateral ventricle. It communicates with an abscess extending straight out to upper posterior part of temporospheroidal lobe. It does not perforate the surface of the brain. The cavity is cylindrical, two and a-half centimetres wide, five long, the pus (several ounces) thick and greenish. No pus in tympanic cavity, no thrombosis of sinus. The skull shows some softening and fatty degeneration of roof of tympanum, also of mastoid bone.

MALFORMATION OF THE HEART, PULMONARY STENOSIS, DEFICIENT VENTRICULAR SEPTUM, OPEN DUCTUS ARTERIOSUS, AORTA ARISING FROM BOTH VENTRICLES, BUT PRINCIPALLY THE RIGHT.*

BY L. EMMETT HOLT, M.D.
New York.

A female child, nine months old, was admitted to the Babies' Hospital three weeks before death. The child had been cyanotic since birth ; had never had convulsions ; weighed but eight and one-half pounds, and presented all the symptoms of extreme marasmus, from which she died.

The physical examination showed the heart-sounds to be weak, the first and second sounds resembling each other both in character and intensity. It was impossible to locate the apex beat. At one examination it was thought that a faint systolic murmur was heard near the apex. This was, however, doubtful, as it could not be heard at any of the other examinations, although these were made with great care and by several persons. The pulse was weak ; there was no clubbing of the fingers or toes ; the cyanosis was intense and constant, being increased by crying.

The autopsy showed all the organs normal except the heart and lungs ; the latter were in a condition of marked congestion, but showed no atelectasis. The apex of the heart was broad. The aorta was five-eighths of an inch in diameter and arose from both ventricles, the origin being directly over the ventricular septum, but more from the right than from the left ventricle. The pulmonary artery was about one-fourth of the size of the aorta. The pulmonary opening admitted only a very fine probe; this was so small that probably no blood passed through it during life. The ductus arteriosus was open, the diameter being about one-twelfth of an inch. The right ventricle was much larger than the left and its walls were twice as thick. The ventricular septum was deficient at its upper portion, the opening being one-half an inch in diameter. The right auricle was much enlarged; the left auricle small. The pulmonary veins were very small. The foramen ovale was closed, and the auricular septum normal.

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*Specimen presented to the American Pediatric Society, Hot Springs, Virginia, May 28, 1895.

The systemic circulation was carried on chiefly by the right ventricle, as only a very small amount of blood could reach the lungs through the pulmonary artery by way of the ductus arteriosus. The chief supply to the lungs was probably through the bronchial arteries.

DISCUSSION.

Dr. F. A. Packard: I wish to report a case similar to two of those reported to-day. This patient also had cerebral abscess. The man, a sailor, had been working up to two days before admission to the hospital, two weeks before. He had Jacksonian epilepsy of the right arm. He was questioned in regard to cyanosis, but gave no history of having had it. The epilepsy increased, and he died three days later in coma. At the autopsy, the base of the skull was found normal. The heart was large, both auricles were dilated, the foramen ovale was patent, and the fore-finger could be placed in the opening. At the ventricular septum, there was also a deficiency in which the finger could be placed.

Dr. A. A. McDonald: I would mention a case of mine that had but one auricle and ventricle, and she lived to be twelve years old. Her only symptom was cyanosis. She died of congestion of the lungs.

Dr. J. P. C. Griffith: I am struck by the fact that here are three cases of perforate septum, one having well-marked murmur, one without any, and one doubtful. Can Dr. Osler tell us the character of the murmur now, after having seen this case?

Dr. Wm. Osler: I had only an opportunity of examining the case once. The murmur was very remarkable, and resembled exactly one which I had heard in two cases of communication between the aorta and the vena cava. I would like to call the attention of the members to the importance of making a proper dissection in these cases of congenital heart disease. If there is plenty of time, make the dissection of the arterial and venous trunks *in situ;* if not, cut the vessels and trachea high in the neck; strip out from the front of the spine the thoracic viscera; cut across at the level of the diaphragm and remove for subsequent careful dissection. Would it not be interesting hereafter to have one afternoon devoted to the exhibition of anatomical specimens, taking up each year some subject as directed by the Council?

Dr. A. Jacobi: These cases are certainly remarkable. Some spoke of cerebral complications. It is possible that abscess in my case had something to do with it. The dura mater was normal, and it was difficult to see how abscess of the brain depended on a change in the bone. It appears to be common in such cases.

◆

Traumatic tetanus is the most frequent and important form of the disease, and is mostly seen after punctured or lacerated wounds, burns and scalds. The causative influence does not seem to be favored at all by the extent or size of the wound. It may follow a mere contusion, the slightest wounds being frequently followed by tetanus, as the most extensive injuries. It may result from surgical operations, wounds containing foreign bodies, injuries of nerves, muscles, and tendons, etc. It never occurs after amputation of the female breast (F. S. Dennis). Wounds of the fingers, palms of the hands, soles of the feet, and toes may cause it. Sometimes pyemic symptoms supervene before the disease fairly develops. Tetanus may result immediately from a wound. It has followed, at once, ligation of the crural nerve in amputation of the thigh. In other cases days and weeks elapse ere the symptoms are developed.

Children are frequently subjects of tetanus. Of Laurie's valuable collection of cases (Glasgow Infirmary), 50 in number, 9 occurred in children. From other sources he collected 171 cases, 35 of which were children. Of Poland's collection taken from Guy's Hospital (1825-1857), 72 in all, 16, or 22 per cent., were instances of this kind. More recently, Taylor's record of · 51 cases at Guy's Hospital, from the years 1860 to 2877, shows 12 tetanic subjects (23½ per cent.) which were young children. We might, therefore, infer the average percentage to be about 22. A large proportion of the cases in the Pennsylvania Hospital were those of children under 15 years of age.—*Harold*, *Medico-Surg. Bulletin*.

Clinical Memorandum.

A CASE OF CONGENITAL ATRESIA OF THE HEPATIC DUCT, WITH CIRRHOSIS OF THE LIVER.

REPORTED BY GAVIN M'CALLUM, M.B.,

Late House Surgeon to Royal Hospital for Sick Children, Glasgow.

[UNDER THE CARE OF DR. JAMES FINLAYSON.]

William F., æt. 4 months, was admitted to Carlile Ward under the care of Dr. Finlayson, on July 2d, 1894, with a history of jaundice dating from a fortnight after birth.

History of Present Illness.—Until a fortnight old nothing was noticed wrong with the child; but about this time the skin began to assume a yellow tinge. This yellowness has gradually become more marked in spite of medical treatment at home. Six weeks ago the left eye became severely inflamed. This has subsided, but has left a scar in the cornea. There has been some cough for about a week. The child has always taken the breast greedily, but for the last two days it has vomited curdled milk. The habit of the bowels has been constipated, requiring opening medicine from time to time, and the motions have been pale, as a rule yellow, but sometimes greenish. The urine stained the napkins of a coffee color. There is no history of hemorrhages, umbilical or otherwise, and no cause is known for present illness.

Family History—The father and mother are both healthy and no history of syphilis can be obtained; the father denied any taint and the mother had had no miscarriages. The patient is their first child.

Present State, *July 2d*—The child presents a fairly well nourished appearance. The skin and mucous membranes are deeply bile-tinged. The left eye presents a corneal cicatrix with anterior synechia. There is an umbilical hernia, containing a readily reducible knuckle of bowel. Pulse numbers 140, and the respirations 40 per minute. The temperature is 100°.4 F.

Abdomen—Examination shows the liver to project an inch and a half below the costal margin in the nipple line. The spleen is also slightly enlarged.

Chest—Examination of thoracic viscera reveals nothing remarkable.

July 3d—The child has been sick to-day, and vomited curdled milk. General condition not improved. The napkins are quite markedly bile-tinged from the urine. The motions are of a bright yellow color.

July 4th—Convulsive movements have been noticed since last note, mostly of arm and leg, but also of the trunk. There has been vomiting of "coffee grounds" material, due, apparently, to a slight admixture of blood.

Later—The child died without any further notable change.

Post-mortem examination by Dr. Joseph Coats, July 4th.

External Appearances—The body is that of a fairly well nourished child. The whole skin and conjunctivæ are deeply jaundiced. There is a hernial protrusion at the umbilicus in the form of a cylinder. The protrusion contains intestine, but it is very readily reduced.

Chest—The *heart* presents nothing remarkable. The *lungs* are generally bile-stained, and they both present, especially on the posterior aspects, numerous deep blue patches, some of them of considerable size, which extend into the lung-tissue, in the case of the larger ones to a considerable depth. There are also some isolated ones in the midst of the pulmonary tissue. These have the aspect of hemorrhages, and microscopic examination confirms this opinion.

Abdomen—The *liver* presents a deep brown color generally, but on the upper surface the color is much paler. It presents on the surface a general finely granular aspect. There is no appearance of gall bladder protruding from anterior edge, and careful examination only reveals in a recess on under surface a greatly shrunken and flaccid structure. A bristle introduced at papilla into duodenum passes freely, right up towards the porta of the liver. There may be some narrowing just at papilla. On more careful dissection the duct which is pervious is found to be continuous with the cystic duct passing onward with a sigmoid curve to the empty gall bladder, which is found collapsed and misplaced. There is found no trace of hepatic duct except a thin white cord. The duct from duodenum upwards is small and there is no trace of bile in it. The liver, which is tough on section, presents no appearance of dilated ducts. In the neighborhood of duct and of porta of liver there are a number of much enlarged glands which have a deep brown color resembling that of the spleen, and there are also glands in the abdomen not so much enlarged but similarly colored, weight, 8½ oz. *Microscopic examination* shows an extraordinary degree of cirrhosis. There are only islands of hepatic tissue representing diminished lobules. These are deeply bile-stained and the cells present little nuclear staining. In the new-formed connective tissue a great abundance of bile duct is found, but neither in them nor in the bile ducts of the capsule of Glisson is there any great distension. Crystalline pigment is found amongst the general staining.

The *mesenteric glands* are normal. The *spleen* is much enlarged and firm in texture. Weight, 3 oz. The *stomach* contains small quantity of shiny, dark-brown matter. The *caput caecum* is considerably shrunken and the ileum enters with it abruptly close to the vermiform appendix. The *kidneys* seem somewhat enlarged.

Remarks by Dr. Finlayson—Following the tabular statements of Dr. John Thomson in his valuable memoir "*On Congenital Obliteration of the Bile Ducts*," Oliver & Boyd, Edinburgh, 1892, we may summarize the clinical features of this case thus: No syphilis in parents traceable. A first child; age at death four months; male sex; not premature; no details of labor; healthy at birth; no signs of syphilis in child, unless ulcer of cornea were so; jaundice seen when fourteen days old. Meconium, no details. Motions pale, but usually yellow, sometimes green. Jaundice varied a little, but persisted. Fairly nourished. No external hemorrhages, except coffee ground vomiting before death, but some hemorrhages found in lungs. No ascites. Spleen enlarged.

The correct diagnosis in this case was arrived at, and the enlargements of liver and spleen were likewise made out. The degree of cirrhosis was extreme. The eye affection, with a cicatrix in cornea and an adherent iris, and the presence of hemorrhages in the posterior parts of lungs are worthy of note. The coffee ground vomiting was probably due to the cirrhotic liver.

The point of interest in the diagnosis, to which special attention was called during life, was the very distinct history of the motions being colored, as given by the mother; while stated to be pale, they were as a rule, she said, yellow, and sometimes green. While in the ward the napkins were shown to those present as presenting a bright yellow color in the motions which could not be said to be devoid of bile. Nor could the color be ascribed to mercurial medicines. The presence of the yellow color in the motions was not, however, held as vitiating the diagnosis, as it is well known that such have been described in various cases where the ducts were actually obliterated.

The occurrence of convulsions before death has been observed in other cases.

The common bile duct and the cystic duct were pervious from the duodenum to the empty gall bladder, but the duct from the liver was represented by a mere cord.

Editorial.

MORPHINISM IN CHILDREN.

The cases of morphinism reported by Dr. Mattison are very striking and extreme examples of a condition that in milder form is far too prevalent. The fact that so few cases of morphinism in children appear in indexed literature does not necessarily prove that the condition is a rare one. To a less marked degree than in the cases reported it is unquestionably common. It is no doubt frequently overlooked or the symptoms are mistaken for those of other conditions. It is not infrequently suspected when actual proof is not forthcoming. The physician whose attention has been called to the subject will sometimes see symptoms which he believes are due to the use of morphine, but he may not be able to actually demonstrate the fact that the child has received an opiate. This is especially difficult when it has been administered surreptitiously by the nurse.

Preparations containing opium are sometimes given to infants by their nurses from the earliest hours of life. An abnormally quiet baby during the first ten days is always an object of suspicion. To insure rest and quiet for themselves nurses too often resort to paregoric and soothing syrup. The suspicion is strengthened if a quiet and easily managed infant a few hours after the departure of the monthly nurse becomes restless and irritable, cries piteously, and refuses to sleep for hours in succession. A young and inexperienced mother may be unable to manage a child as successfully as an experienced nurse, but a very radical change in an infant's whole nature may justly suggest the idea that improper means have been employed to induce sleep. It is also certain that nurses to render themselves indispensable in a family have administered opiates, well knowing that when they were stopped the child would become irritable and that her presence would finally be regarded as necessary.

For the relief of pain no drug equals opium. When actual pain is present, it may be given to children with perfect propriety. Condemnation cannot be too strong, however, against its use for minor ills and aches. It should never be used for sleeplessness, unless due to actual pain. It is unwise to allow a mother to suppose that she can use paregoric. If it is indicated, let it be prescribed or left diluted and ready for use. A few tablet triturates, each representing ten minims of paregoric, may be left with the assurance that their use will not be continued indefinitely. When a child is cross and irritable, the temptation to the mother to repeat an opiate is very great, and should be guarded against as far as possible. The number of babies who have thus been forced into the opium habit is undoubtedly large.

The tendency on the part of physicians to administer opium and alcohol has fortunately diminished somewhat during recent years. While both are valuable medicinal agents in their proper place and are in some conditions indispensable, the tendency to use them less freely must be regarded on the whole as a most fortunate one.

SCHOOL LUNCHES.

A PROLIFIC source of indigestion, irritability, and anæmia among children is to be found in the character of the lunches they eat at school. In the country, where the distances are great, many children are obliged always to take their lunches with them. This too often consists of cake, pastry, and preserves, to the exclusion of more digestible and nutritious food. It is, as a rule, eaten in haste, that time for play may not be encroached upon, and is washed down with large draughts of cold water. Too often such lunches are not adapted to the needs of a growing child, and the haste with which they are eaten adds to thieir pernicious tendency.

In the city, although the conditions are quite different, the school lunch also plays an important part in depleting the health of many children. Parents are frequently extremely unwise in allowing their children to remain at school during the lunch hour when it is not necessary. They would be far better for the exercise of walking to and from school, as well as for a warm and properly-prepared lunch. Not infrequently the child is allowed to buy his lunch at some neighboring bakery, and a neighboring bakery is a very common accompaniment of a large city school. We were recently passing one of these bakeries just at the lunch hour. It was thronged with school children, chiefly girls from ten to fourteen. A small procession was passing back to the school, each girl with a paper sack in her hand. Being curious to see the character of the purchases, we entered and found without exception that the paper sacks were being filled with cakes or pastry; *chocolat eclairs* being apparently at a premium. The wares of the shop were prepared apparently for the especial purpose of catering to the school trade, and consisted almost exclusively of cakes and small pies designed for lunch purposes.

These girls were at that time preparing for examination and promotion. Some of them were undoubtedly a source of anxiety to fond parents because of listlessness, irritability, and growing anæmia. If the doctor was consulted, he undoubtedly gave much good advice and prescribed tonics. Advice and tonics would prove, however, equally unavailing on such a diet. A growing and developing girl of fourteen, working hard for promotion, requires something more sustaining between breakfast and dinner than a brace of *chocolat eclairs* or a quarter of a pound of angel cake. The doctor summoned to give advice regarding such a girl, who does not inquire minutely concerning her diet at the lunch hour, may fail to reach a very important factor in the etiology of the case.

CARDIAC ANOMALIES.

The cardiac anomalies reported in the present number are all of considerable interest, as such malformations usually are. During life they are not uncommonly the source of much perplexity, as their diagnosis is usually difficult. It not infrequently happens that an exact diagnosis is quite impossible, the presence of a malformation being all that can be determined with certainty. Such anomalies vary so greatly in their character, that wholly satisfactory classification cannot be made. Osler divides them into three classes: I. Conditions in which structures normal to the fœtus persist during extra-uterine life, such as open foramen ovale and patency of the ductus arteriosus. II. True anomalies of development, as absence or imperfection of the ventricular septum, anomalous divisions of the truncus arteriosus, transposition of the great vessels, and numerical variations in the valve segments. III. Conditions caused wholly or in part by endocarditis, as extreme stenosis of the cardiac orifices, and distension of the valve segments.

Patency of the foramen ovale has probably excited more attention than any other cardiac anomaly, but defects in the ventricular septum are more common. Narrowing of the pulmonary orifice is also a condition of great interest, particularly as it does not always shorten the duration of life. The difficulty of determining with certainty that any given condition is present is clearly shown in the reports of the present cases. Similar anomalies are reported by three different observers, giving three quite different sets of physical signs. The most common rational symptom is cyanosis. Although this symptom is present in a more or less marked degree in a large proportion of cases, it is sometimes absent. Anomalous conditions have sometimes been found at autopsy which were not suspected during life. The physical signs are variable and are sometimes extremely misleading. Peculiar murmurs are usually heard and are not unfrequently so loud as to obscure all other sounds. A loud systolic murmur at the left of the sternum near the base of the heart is the most frequent abnormal sign. It may be indicative of patency of the ductus arteriosus, imperfection of the auricular septum, or narrowing of the pulmonary orifice. In the latter condition a thrill is also present in some cases.

CHANGE OF PUBLISHER.—We are gratified to announce that with the beginning of the coming year the business management of THE ARCHIVES will be assumed by the well-known publishing house of E. B. Treat, one of the most reliable and energetic medical publishers of New York. The interests of THE ARCHIVES will be pushed with the utmost vigor. Increase of the circulation will be regarded as the first and most important object to be attained. The ability of this house to accomplish that end is unrivaled, owing not only to long experience and intimate acquaintance with the medical profession, but also to the fact that it has general agencies in all the larger cities of the country. These agencies will be at once actively enlisted in the work. THE ARCHIVES has never entered upon a year with brighter prospects of continued and increased prosperity. By conservative and judicious but vigorous management in both the editorial and business departments, we hope to raise it to an even higher position than it has yet attained. Illustrations will be freely used whenever necessary to more fully elucidate the context. In January the size will be increased, and the most earnest efforts will be made not only to maintain the subject matter at a high standard, but to give it the widest possible circulation.

THE delay in issuing the October number of THE ARCHIVES was due to a serious fire which occurred on September 28th in the building of the Rooney & Otten Printing Co. The October issue was almost ready for the mail, but was completely destroyed, the presses and forms also being seriously injured. Its reprinting and issuing on October 14th, and the prompt issue of the present number, reflects the greatest credit upon the energy and efficiency of the Rooney & Otten Company.

Bibliography.

Practical Dietetics, With Special Reference to Diet in Disease. By W. Gilman Thompson, M.D., *Professor of Materia Medica, Therapeutics, and Clinical Medicine in the University of the City of New York, Visiting Physician to the Presbyterian and Bellevue Hospitals.* New York: D. Appleton & Co., 1895. Pp. 22–781. Price, $5.00.

Although there are many works extant on dietetics, there are but few really practical works on the subject of dietetic treatment of disease and the exact application of dietetics to various diseased conditions. The directions given in most text-books regarding the feeding of patients are extremely vague. The subject receives no attention in most medical colleges. The present volume has been prepared, the author informs us, with the view of making good these deficiencies. In attaining this end he has been, on the whole, successful. Since much depends upon the suitable preparation of food as well as its selection, a general account of the composition and uses of foods and the changes which may be produced in them by cooking and other processes has been given. Although the book deals with general dietetics, so much space has been devoted to the feeding of infants and children that a review in these pages is eminently proper.

In the chapter on foods about fifty pages are devoted to milk. Milk is such an important article of diet during early life that the medical men should possess a thorough knowledge of its composition, varieties, and peculiarities, its contaminations, methods of preservation, and preparation, and its many uses. This section is one of the best of the book and is an extremely valuable and interesting one. It is, in fact, one of the most complete monographs on milk with which we are acquainted. Other classes of foods are considered in greater or less detail.

The second part is devoted to stimulants and beverages. In fevers and the diseases of infancy, the author is, we think, inclined to use alcohol too freely. Opinions upon this subject differ widely, but the error on the part of the author is, in our opinion, a grave one. The present tendency is rather against than in favor of the very free use of alcohol in pneumonia and other acute febrile conditions.

The section devoted to cooking and food preparation is an extremely interesting one. The same is true of the section on the conditions which affect the digestion. The section on diseases caused by dietetic errors contains much that is important, especially that portion which refers to foods which contain ptomaines. The short chapter on methods of feeding the sick is worthy of especial notice.

The most important section is that devoted to diet in disease. It is here that grounds for criticism could most easily be found. There are few subjects upon which opinions differ more widely than upon the diet best adapted to certain diseased conditions. With our present knowledge it is a subject upon which very few dogmatic statements can be made. A peculiar feature of this section is the fact that the dietetic treatment of each disease is given in full without reference to other portions of the work. While this has the advantage of great convenience in reference, it involves much repetition. Many of the opinions stated in this chapter are certainly the result of theory rather than of practical experience.

The chapter devoted to the diarrhœas of infants and children is on the whole extremely good and leaves but little to be desired. The portion devoted to constipation in infants is good, but more stress might have been laid upon the administration of fats, although its importance is recognized by the author. He states a very important fact in saying that when constipation is present in an infant at the breast, the milk is usually too rich in caseine and deficient in fat. Such an abnormal condition is almost certain to be followed by constipation and colic. In the treatment of rickets the author fully appreciates the importance of the administration of fats and has almost wholly escaped the deficiency-of-lime theory. He advises free use of cream and avoiding an excess of starchy and saccharin foods.

The section devoted to the food of infants is on the whole an excellent one, but some grave errors have been made. The author quotes very largely, chiefly from Holt, Roch, and Starr. In quoting from these authorities he has been upon perfectly safe ground. In making certain other quotations he has not been so fortunate. By quoting several authorities on the same points he has not only confused the subject, but has introduced a number of things which in the light of our present knowledge must be regretted. The pages on the diet of school-children are excellent. Taken as a whole, the book is an excellent one and will furnish exact information to the medical man upon many important subjects which he will find in no other place.

The Psychology of Childhood. By Frederick Tracy, B.A., Ph. D., *Lecturer in Philosophy in the University of Toronto.* Third edition. Boston: D. C. Heath & Co. 1895. Pp. viii–160. Price, 75c.

The author of this little book has undertaken to present in concise form, a very broad and many-sided subject. The various aspects of this subject have been written upon, but this is the first attempt that has been made to cover the whole field. The questions treated are fundamental not only for psychology, but also for pedagogy. Although the book is designed primarily for the student of psychology and pedagogy, it cannot but prove of great value to the physician interested in the diseases of infancy. It contains, practically, all that is at present known upon the various subjects of which it treats. Although the work of others has been largely drawn upon, the book is in no sense a compilation. The author is a master of the subject in all its details, and his book contains many important additions to our knowledge.

The work is a study of the mental phenomena in their genesis and early development in children. In other words, it is a discussion on infant psychology. When and how do mental phenomena take their rise in the infant consciousness? How far are they conditioned by heredity, and how far by education, including suggestion? What is the nature of the process by which the automatic and mechanical pass over into the conscious and voluntary? are some of the questions the author attempts to answer. His method has been to gather together, as far as possible, the best work that has been done in actual observation of children, to arrange this properly, to incorporate the results of his own observations and to present the whole in a epitomized form. The scope of the work is best appreciated by a review of the subjects considered.

In the first chapter sensation is discussed; sight, hearing, touch, smell, taste, and other sensations being considered, with the attempt to answer the questions regarding each which have already been enumerated. In the second chapter the emotions—fear, anger, curiosity, love and jealousy—are considered in the same manner. In the third chapter the intellect is considered, the various sections being devoted to perception, memory, association, imagination and the discursive processes. The fourth chapter is devoted to volition, impulsive, reflex, instinctive and ideational movements being considered. The last chapter, that upon language, is one of the most important in the book. It contains the results of more original observation and study than any of the other chapters, and is a valuable contribution to the subject of philology.

The book, though small, is an important addition not only to psychological, but to pediatric literature, and will prove most instructive to physicians who would comprehend fully the little patients intrusted to their care.

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Etiology of Rickets—Hagenbach-Burckhardt (*Berl. clin. Woch.*) discusses the etiology, with special reference to rickets being an infective process. Theories attributing the disease to deficiency of lime salts, to lactid acid, are no longer tenable. Kassowitz, under certain circumstances, is disposed to admit various micro-organisms as the cause of rickets. Poisons due to micro-organisms can readily be supposed to set up the lesions found in the disease. The temperate zone is the one in which rickets abounds. The cases of rickets increase at the beginning of the cold season, when children are kept in the house. The greater the altitude, the less frequent is rickets. The infective theory would explain the prevalence of the disease in vitiated, and its infrequency in pure, atmospheres. Both rickets and tuberculosis are most developed in large towns and in notoriously unhealthy streets. Enfeeblement of the individual by acute or chronic disease predisposes to both diseases. Measles also predisposes to both. In early age, chronic infective processes are frequently localized in the bones. There is nothing in the clinical picture of rickets against the view of its being an infective disease. Acute rickets is known. The spleen is frequently enlarged. The objections to the view are that no micro-organism has been found, and that similar changes in bone may be produced experimentally in animals by withholding lime salts. The author thinks that the disease set up in this way is not identical with rickets, nor does he think that fœtal rickets has been shown to be identical with the ordinary disease. He would look upon defective feeding, vitiated atmospheres, acute and chronic infective diseases, as predisposing causes only.—*British Medical Journal.*

Society Proceedings.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

Stated Meeting, Oct. 10, 1895.

FLOYD M. CRANDALL, M.D., *Chairman.*

MALARIA AND GENERAL TUBERCULOSIS.

Dr. W. L. Stowell presented the lungs and spleen from a case of tuberculosis occurring in a negro child of two years. The case was of interest on account of the fact that last July there had been an irregular fever, associated with the plasmodium of malaria in the blood, and that for a month or more after this the child had appeared to be perfectly well. It had then developed the signs of general tuberculosis.

MORPHINISM IN CHILDREN.

Dr. J. B. Mattison, of Brooklyn, read a paper on this subject. (See page 812.)

Dr. J. H. Fruitnight said that he had never met with the congenital variety of morphinism in children, but he frequently observed the acquired form, as a result of mothers dosing their little ones with soothing syrups, cough syrups, and the like. It was the duty of every physician to instruct mothers regarding the danger of using the many nostrums vaunted for use in children's ailments, as almost all of them contained opium.

Dr. Louis F. Bishop said that not only had chemical investigation shown that morphine passed out in the lacteal secretion, but the fact of its transmission in this way had been observed clinically in the case of a child suddenly deprived of the breast of a mother who had been taking morphine.

Dr. Charles G. Kerley said that although he saw very many children, he had never met with a case of the morphine habit in them.

Dr. Walter Lester Carr said that the so-called "chalk mixture" so freely given to little ones for diarrhœa was a fruitful source of morphine poisoning.

Dr. E. A. Tucker said that he had seen in hospital one case of congenital morphinism in a child. The mother before the birth of the child had been accustomed to take morphine and to smoke opium. At birth the child appeared to be healthy, but when given to a good wet-nurse, it had not thrived. His explanation of this was that the sudden withdrawal of the child from the influence of the morphine had exerted this baneful effect upon it.

The Chairman spoke of a case in which there had been every reason to strongly suspect morphinism, although he had been unable to prove it at the time. In an emergency he had been called in to see a little child who was in an exceedingly nervous—indeed, almost maniacal condition. The parents stated that the little one had been very nervous and excitable up to a short time before, when they had procured a new nurse for it. From that time on, the child had been much quieter, so much so that the whole family had remarked the wonderful quieting influence this nurse had on the child. On the day before, this nurse had been called away ; before morning the child began to be ill, and the excitement increased from hour to hour. There was strong evidence to show that this was due to the sudden withdrawal of the accustomed supply of some narcotic, probably opium.

Dr. Mattison, in closing the discusson, said that there was not the slightest doubt that the morphine was excreted through the mammary gland. It should not be forgotten that the children born of morphinists almost invariably die suddenly about the third day after their birth. This might possibly be prevented if the baby were given small, and diminishing doses of morphine for a few days after birth.

INFECTION OF THE CENTRAL NERVOUS SYSTEM OF THE NEW-BORN.

Dr. Ira Van Gieson said that the conditions under which the umbilicus healed after the birth of a child were specially favorable to infection, and yet the occurrence of an acute exudative meningitis in the new-born as a result of such an infection was certainly quite rare. Only two cases had been observed in the Sloane Maternity Hospital during a period of several years. His object in reading this paper was to report these two cases, as they had been observed carefully, and it had been possible to secure in both cases, not only an autopsy, but a bacteriological examination. The second case was the counterpart of the first, so that only one description was necessary. The child had developed icterus about the fifth day, and two days later the first symptoms due to the infection were observed. The clinical diagnosis was meningitis. The child died on the eleventh day. Even on careful inspection there was nothing about the umbilicus to indicate that this was the source of the infection, but as there was no solution of continuity on the integument, elsewhere, this region was subjected to a rigorous examination. On dividing the umbilical vein, a column of pus was discovered. The other tissues were normal. Pure cultures of the streptococcus pyogenes were obtained both from the brain and umbilical cord. Microscopical examination of the brain showed that the acute exudative meningitis was of a severe grade.

Dr. Ervin A. Tucker said that while listening to the paper he had been particularly struck with the way in which the pathogenic bacteria skipped over certain organs and lodged in other remote ones. He had observed a number of cases in which the infection after gaining entrance at the navel had skipped over to some remote part. From the comparative frequency of cases in which the umbilicus is seen to be suppurating, it was remarkable that these cases of infection in the newly-born were not more common. As our treatment was powerless when once the infection had gained a foot-hold, the importance of prophylaxis was apparent. An important step in this direction was to make use of powders which would keep the navel clean and dry.

Dr. W. H. Park referred to his investigation into the germs found in the throats of the hospital nurses at a time when the hospital was free from any cases of infection.

Dr. Henry D. Chapin said it was important not only to carefully dress the umbilicus with dry powders, such as bismuth, but the physician should personally watch the healing process until the navel was completely cicatrized.

Dr. Fruitnight said that he had seen suppuration at the umbilicus much more frequently during the period when moist dressings were in vogue than latterly, since it had become the custom to use dry dressings.

Dr. R. G. Freeman said that he had seen one case of death in an infant from general infection developing after the umbilicus had entirely healed. On dividing the umbilical vein at the autopsy, this vein was found to contain considerable pus.

The Chairman said that the remarks of Dr. Chapin had clearly pointed out the practical application of the facts presented in the paper. The physician should attend to the healing of the navel as carefully as to any other of his duties in the lying-in chamber.

WM. L. STOWELL, *Secretary.*

The Evils of Night Work for Children—Sir James Crichton Brown, speaking on the subject of pursuing young children with lessons into their home life, says it seems to me high time for a declaration of rights on behalf of future generations also, whom, if we are not careful, we shall load with a burden more grievous than the national debt—a burden of degeneration and disease. I trust that some one of my medical brethren will bring this subject to the front, and obtain an emphatic condemnation of "home work" in the case of children under twelve years of age. I have encountered many lamentable instances of derangement of health, resulting from enforced evening study in the case of young children, with the nervous excitement and loss of sleep which it so often induces, and I am fully persuaded that even when it does no perceptible injury to health, it is inimical to true progress. To pursue young children withlessons into their home life, and those hours when they should be roaming fancy free, is to endanger their symmetry of growth. It is indisputable that evening work by artificial light is peculiarly detrimental to vision, and conducive to that short-sightedness which is increasing amongst us so rapidly, and that it tends more than day work to cause deformity of the spine.—*Charlotte Medical Journal.*

Current Literature.

I.—MEDICINE.

Henry, Frederick P.: Chlorosis and Its Treatment. (*University Medical Magazine*, 1895, vol. vii, No. 11.)

The chief predisposing causes of chlorosis are : (1) Sex, the vast majority of cases occurring in females. (2) Age, the decade between fourteen and twenty-five years furnishing all the cases. (3) Constitution either inherited or acquired.

The exciting causes of chlorosis are those of anemia in general, such as insufficient food, light, air, and exercise, overwork, either physical or mental, anxiety, grief, and nervous excitement. There is another exciting cause on which great stress was recently laid by Sir Andrew Clark, and which, therefore, deserves to be considered at some length. This cause is constipation, and Clark considered it of such paramount importance that he used the term fecal anemia as a synonym of chlorosis. This theory was based upon certain signs and symptoms that are more or less commonly encountered in chlorosis. Chief among them are digestive disturbances. The tongue is generally heavily coated at the base, large, flabby, and with its sides indented with the teeth. The breath is disagreeable. There is a sense of epigastric oppression after the ingestion of food. The bowels are either confined or inadequately relieved, and the feces generally consist of scybalous masses embedded in mucus swarming with bacteria. Pain in the side, generally most marked on the left, is common.

It is scarcely necessary to add that there are those who regard chlorosis as an infectious disease. Among these are Clément, of Paris, who bases his opinion of its infectious nature on the enlargement of the spleen which he has found in thirteen cases, on the frequency of febrile movement, the occasional complication of phlegmasia dolens, and the epidemic occurrence of the affection. The hypothesis is well argued, but the facts on which it is based are questionable.

The only constant anatomical factors of chlorosis are those of the blood itself. At the present day it is generally admitted that the changes in the red corpuscles may be at least three-fold. (1) They may be of normal size and number, their only change being a deficiency of coloring matter. (2) They may be diminished in number with diminished percentage of coloring matter. (3) They may be diminished in size and normal in number and in percentage of coloring matter.

Of the above-mentioned varieties the second is the most severe, and in it there are often marked changes in the shape of the red corpuscles (poikilocytosis) such as are so commonly observed in pernicious anemia.

From these facts it is clear that there is nothing uniform in the behavior of the red corpuscles in the disease called chlorosis, so that an attempt to describe it as a distinct disease from an anatomical standpoint must result in failure. The essential point is that the percentage of hemoglobin is reduced in this affection, and this is common to many forms of anemia.

With our present knowledge, the most sensible view of the nature of chlorosis appears to the author to be the following: At the time of puberty there is an urgent physiological demand upon the blood, which is complied with by vigorous individuals without detriment to the organism. The ordeal of puberty is safely passed. In less vigorous, but still sound, healthy organisms, a decided degree of anemia, one calling for treatment, declares itself at this time. Finally, in those with any congenital tendency to anemia, whether this may have been due to general malnutrition during intra-uterine life, or to a special hypoplasia of the vascular system, the anemia of puberty is intense. The case is a typical one of chlorosis.

There are certain diseases to which chlorosis stands in the relation of a predisposing cause, and which, therefore, may be regarded either as complications or sequelæ. The chief of these are phthisis, gastric ulcer, chorea, and exophthalmic goitre.

As Immermann remarks, "there is scarcely any point in therapeutics so fully established as the remarkable efficacy of iron, in removing all the symptoms of chlorosis," but it does not follow that iron should initiate the treatment in every case. Nearly all chlorotics are dyspeptic, and until the digestive disorder is relieved, the full benefit of iron cannot be obtained. In cases of atonic dyspepsia the simple bitters, such as quassia or gentian, or exciters of the smooth muscular fibres, such as strychnia or brucia, may be administered before meals, or if there is gastric dilatation, naphthol, salicylate of bismuth or chloroform-water may be given three or four hours after meals, in order to limit or stop the abnormal fermentations generally present in that condition. Hyperacidity of the gastric juice should be treated with full doses of alkalies—soda, chalk, or magnesia—from one to two hours after meals, and an acidity, with dilute hydrochloric acid immediately after eating.

There has been much discussion concerning the *modus* *operandi* of iron in chlorosis. A study of a few cases of chlorosis, perhaps even of one, will lead any reflecting physician to the conclusion that the cause of chlorosis is not a deficient supply of iron, but something that interferes with its assimilation. It is evident, therefore, that there is something which interferes with the digestion and assimilation of the iron, which is abundantly present in the food of chlorotic individuals. There has been much discussion as to the relative merits of organic and inorganic preparations of iron, and there can be no doubt that both are effective.

There is one important fact concerning the treatment of chlorosis upon which stress has been recently laid by Stephen Mackenzie, and which the author has had repeated opportunities of verifying. It is that while it is easy to improve the condition of a chlorotic girl up to a certain point, it requires great perseverance on the part of both physician and patient to effect a complete cure. The hemoglobin percentage may rise from 25 or 30 to 70 or 75, and may there remain for many weeks. The patient's general condition is vastly improved; she considers herself well and refuses to continue the treatment that has apparently cured her. Relapse, under such circumstances, is certain and speedy. Ferruginous preparations should be continued for two or three months after apparent cure.

Poole, A. C.: Treatment of Diarrhœa in Infancy. (*Lancet-Clinic*, 1895, Vol. xxxv., No. 5.)

Treatment will vary somewhat, according to the causes and severity of the case. In simple diarrhœa a dose of castor-oil or syrup of rhubarb will remove the offending material. Withholding milk for twelve to twenty-four hours, giving thin broths, whey, barley-water, etc., instead, and the administration of bismuth subcarbonate or subnitrate, will usually effect a cure.

In microbic diarrhœa, or milk infection, as Vaughan calls it, free irrigation of the stomach and colon is required. This may be accomplished with a large-sized Nelaton catheter. The fluid used may be the normal salt solution, or dilute borax solution if much mucus be present. The irrigation acts favorably in many ways. It empties the large bowel of its poisonous contents, and by promoting peristalsis favors a rapid passage of the contents of the small intestines as well. Fever may also be reduced by using cool water. The irrigations are to be used twice a day, or oftener if necessary. Repeated irrigation of the stomach is usually unnecessary.

Intestinal antiseptics are theoretically indicated, but the difficulty consists in finding one both safe and efficient. Salol, salicylate of bismuth, naphthaline, B-naphthol, and many others have been used with doubtful benefit. Calomel is more useful, acting both as a purgative and antifermentative. It may be administered in one dose or repeatedly in divided doses. Astringents are in disfavor, except nitrate of silver and tannic accid, which are used in solution by irrigation, especially in chronic cases affecting the lower bowel.

In cholera infantum a hypodermic injection of one one-hundreth of a grain of morphia will often be of service. In these cases the great prostration will demand stimulants—brandy, strong tea and coffee. The frequent administration of water is necessary, and in extreme cases the normal salt solution hypodermically. Milk, of course, is to be prohibited in these cases; albumen-water, broths, etc., are substitutes.

Fromaget: Formol in the Treatment of Purulent Ophthalmia. (*Annales d'Oculistique,* Vol. cxiii., No. 2.)

The method of application was as follows: After careful irrigation of the palpebral and bulbar conjunctiva with a solution of formol, 1 to 2,000, a few drops of a stronger solution, 1 to 200 were instilled. This process was repeated four times a day. Ten cases of purulent ophthalmia in newborn children were treated at once with the above method, and cure resulted in from seven to twelve days. Three other cases are reported, in which treatment with silver nitrate and bichloride had been tried without improvement; one of these cases was complicated by corneal ulceration. They were also cured. Two cases of failure are recorded in adults with blennorrhœic ophthalmia.

The author concludes that while silver nitrate remains the leading antiseptic in purulent ophthalmia, conjunctival irrigations are necessary, and an adjunct to the silver is needed. Formol fulfills this purpose. By combining the two, satisfactory success is certain.

Formol is not altered by light: it does not rust instruments; it is antiseptic; but its one disadvantage is that strong solutions (1-200) are painful; weak solutions (1-2000) cause no pain. It is sufficient to cure ophthalmia neonatorum when used alone, and it is not dangerous to the corneal epithelium, as silver nitrate may be in inexperienced hands.

Babes and Zambilovici: Researches on Noma. (*Rev. in Rev. Internal. de Med. et de Chir. Pratiques*, Vol. vi., No. 8.)

Noma should not be confounded with any other stomatitis gangrenous in character; it is a morbid entity with special characteristics of onset, course, duration and prognosis. The process should be considered of microbic origin, transmissible, and developing upon a soil prepared by a preceding infectious disease, most frequently measles. An anæmic condition and the presence of abundant fatty tissue also predispose to noma. In no case has the noma been due to the bacteria of the primary disease. The pathogenic agent, according to the studies of the authors, is a very fine bacillus, which may be present in enormous numbers in the destroyed tissue; again it may be demonstrable by culture only. Bouillon cultures injected beneath the skin of the cheek in rabbits produced typical gangrene, resembling noma in every way. In other animals abscesses, or septicemia without any local lesion resulted. The authors were able to demonstrate the fact that this bacillus enters the body by the mouth, especially the gums, accompanied by the other bacteria of the mouth. These are found together with the specific germ in the gangrenous area, and they have some rôle in the production and development of the disease.

Breton: The Mental Condition in Chorea. (*Thesè de Paris, Rev. in Rev. Mens. des Mal. de l'Enf.*, Tome xiii., No. 5.)

Following Jaffroy and Charcot, M. Bréton looks upon chorea as a manifestation of the degeneration of the motor nervous apparatus. As a proof of this, the nervous heredity always present in choreic patients, is cited. When mental disturbances accompany chorea, these are to be considered as the result of mental degeneracy.

One very frequent group of such phenomena comprises disturbances of moral sensibility (as exemplified by exaggerated emotiveness, tendency to anger, etc.); or of the affections, of intelligence, of attention (inaptitude to work), or loss of memory.

In a second group more serious symptoms are included, such as night terrors; hallucinations, almost always appearing in the evening and sometimes lasting throughout the night; troubles of speech not dependent upon chorea of the tongue; and choreic insanity, which may take the form of simple mania, delirium, mania with hallucinations, or melancholy with suicidal tendency.

All these phenomena are quite independent of the severity of the attack of chorea, and are generally cured at the same time.

Stowell, Wm. L.: Congenital Arrest of Development of the Intestine. (*The American Journal of Obstetrics*, 1895, Vol. XXXII., No. 1.)

The author was called to attend George Woolfe, an infant seven days old, who was suffering from intestinal obstruction and vomiting. The mother said there had been no movement from the bowels since birth; but this gave little alarm until the fifth day, when the child vomited matter having a fecal odor. Upon inquiry, it was learned that when two days old the child was given a teaspoonful of castor oil, but without effect. On the next day magnesia was administered, which also failed to act, but caused vomiting. Meanwhile the child nursed well and did not vomit the mother's milk. From the fifth day nursing caused vomiting. The child was constantly bearing down and straining, and seemed to suffer much pain. Examinatian showed a fully developed but very emaciated body, with abdomen swollen and distended, and very sensitive to touch. Palpation disclosed a large mass in the right iliac region, which felt like the tumor of intestinal obstruction. A rectal injection of warm water and glycerin brought nothing but a little blood. A diagnosis of intestinal obstruction or congenital stricture was made. Several attempts were made to give a large enema of warm water, but without success. Stomach lavage was done once, but failed to give relief. The vomiting persisted. The abdominal distension and straining increased, and the child died on the ninth day.

Autopsy—All organs normal and healthy except intestinal tract. The stomach was six centimetres long, with a constriction at the pylorus. The duodenum was then dilated for six centimetres until another constriction cut it down. Beyond this the intestine was a large pouch, twenty-five centimetres long, ending abruptly in a blind end. There was then a cord-like remnant of gut of ten centimetres length, ending in the atrophied remainder of ileum half a centimetre in diameter and collapsed. The vermiform appendix was four centimetres long and attached to the first portion of the duodenum. The colon was less than half a centimetre in diameter until it joined the rectum. The latter was pervious, but small. It is obvious that surgery could avail nothing in such a case. The number of reported cases of this character is small, making the case one of unusual interest.

As to embryology, the author refers to the fact that at the third month of gestation the cecum is found as a large pouch just below the stomach. A portion of it grows rapidly and becomes the colon. The other side of the pouch shrinks and atrophies, and remains as the vermiform appendix. It would seem, therefore, that in this case development was arrested at the tenth or twelfth week. The cause, of course, cannot be known.

Nammack, Charles E.: Acephalic Omphalosite. (*New York Medical Journal*, Vol. XLII., No. 3.)

The author reports a case of this peculiar condition. One fœtus seemed to have undergone a normal development for five months, while the parasite presented a curious instance of malformation and arrested development. A co-existing cyst (hydrencephalocele, springing from the root of the nose) was also present, being a much less rare condition. The parasite in this case was a shapeless mass to which was appended one well formed foot with seven toes; the other lower extremity was rudimentary. The case belonged to the order of omphalositic parasite, this being understood to be an embryo depending for its imperfect growth upon another embryo or fœtus usually well developed, which supplies the circulation of blood for both by means of extensive and intimate anastomoses of the umbilical and placental vessels.

Cyclic Albuminuria. (Ref. *American Journal Medical Sciences*. Vol. CIX., No. III.)

Pong applied the term cyclic albuminuria to unusual forms of albuminuria occurring intermittently in apparently healthy individuals. The albumen was usually found in the daytime, but not in that secreted during the night. An interesting case in point was recently investigated and reported by Treves. The patient was an apparently healthy boy, aged ten years. The chief object of the investigation was to determine the influence of muscular activity on the albuminuria. So long as the boy lay quietly in bed albumen was absent from the urine, but even though he remained in bed, muscular exertion always caused its appearance. Muscular exertion increased the amount of albumen, but the amount excreted bore no relation to the quantity of nitrogenous food taken.

Deaths from Syphilis. (*British Medical Journal*, No. 1781, 1895.)

According to the last report of the Register-General, just issued, 1,190 males died of syphilis in England in 1893. Of these, 928, or 77.9 per cent., were under five years of age. During the same period, 964 females died of the same disease, of whom 745, or 77.2 per cent., were under five years of age. Various as may be the views held regarding the propriety of legislative interference with the propagation of this disease, and as to the efficacy of such means as have hitherto been proposed for that purpose, it is clear that no consideration of the subject can be complete which does not recognize the large comparative incidence of the mortality in the early years of life.

The Bacteriology of Clothes. (*British Medical Journal*, 1895, No. 1796, p. 1225.)

Carlyle gave us the philosophy of clothes; now Dr. Seitz, of Munich, gives us their bacteriology. On examining a worsted stocking, he found 956 thriving colonies, while on a cotton sock there were 712. Both these articles had been worn, but no information is vouchsafed as to the personal habits of the wearer. Thirty-three colonies were found on a glove, twenty on a piece of woolen stuff, and nine on a piece of cloth; none of these articles had been worn. On a piece of cloth from a garment which had been worn a week there were twenty-three colonies. Of the micro-organisms found on articles of clothing, relatively few were capable of causing disease; the pathogenic species were almost without exception staphylococci. In one case, however, Dr. Seitz found the typhoid bacillus in articles of clothing from twenty-one to thirty-seven days, and the staphylococcus pyogenes albus nineteen days after they had been worn. The anthrax bacillus found in clothes was still virulent after a year. The microbe of erysipelas, on the other hand, could not be found after eighteen hours, nor the cholera ribcio after three days. Dr. Seitz studied with special care the question whether in tuberculous subjects who sweated profusely the bacillus was conveyed by the perspiration to a piece of linen worn for some time next the skin of the chest. The inoculation of two guinea pigs, however, gave negative results.

Stewart, J. Preves: Tuberculosis of the Tonsil. (*British Medical Journal*, 1895, No. 1792, p. 970.)

The case was one of ordinary enlargement of the tonsils, with pharyngeal adenoids, associated with post-scarlatinal otorrhœa and enlargement of the cervical lymphatic glands, in a child ten years of age. The scarlet fever occurred two and one-half years before, prior to which the child was absolutely healthy in every respect. There was no history of tubercle in the family.

The tonsils, on naked-eye examination, in no way differed in their appearance from ordinary chronically enlarged tonsils. The tonsillar crypts were unusually well marked, and here and there admitted the point of an ordinary probe.

On microscopic examination, however, the following appearances were found: The lymphoid tissue of the tonsil, covered on its surface by stratified squamous epithelium, was seen to be much sub-divided by the dipping down of folds of epithelium, forming crypts, in which lay masses of amorphous débris, containing numerous micro-organisms. Scattered through the substance of the lymphoid tissue were large numbers of tuberculous giant-cell systems, apparently most numerous close beneath the epithelial surface of the tonsil. These giant-cells were of the typical multinucleated form characteristic of tubercle, surrounded by the usual epithelioid and lymphoid cells. There was no overgrowth of connective tissue around these areas, nor, indeed, anywhere in the tonsil, but the stroma of the gland seemed here and there to have undergone hyaline degeneration. Staining by Jiehl-Niellsen and Yram's methods failed to demonstrate any tubercle bacilli in the sections.

The pharyngeal adenoids on section were found free from tubercle, and consisting simply of lymphoid tissue, covered by a layer of the columnar epithelium of the naso-pharynx. Some enlarged cervical lymphatic glands were subsequently removed from the same patient, and these, on section, showed typical tuberculosis in various stages of advance, from simple enlargement to caseation.

This case seems to show that the tonsil is more important as a channel of tuberculous infection than has hitherto been supposed; and when we regard the frequency with which it is attacked, and attacked successfully, by progenic organisms, it is not to be wondered at that the tubercle bacillus sometimes enters it and flourishes in its lymphoid tissue, a tissue which is *par excellence* a seat of tuberculous deposit.

Stowell, C. H.: New Theories of Digestion. (*National Med. Review*, 1895, iv., 5.)

We have been taught to believe that the moment the saliva reaches the stomach it becomes inoperative. Although Freirichs came to the conclusion a number of years ago that salivary digestion continued in the stomach, yet his work was practically lost sight of. Dr. Kellogg, of Battle Creek, has just published the report of extensive experiments on starch digestion. He examined the contents of the stomach, after a test meal, in 4,875 cases. In 669 of these cases he found the starch had been completely converted into sugar. Only in 1.8 per cent. of the cases did he find there was little or no conversion of the starch. It would thus seem that the digestion of starch takes place in the stomach by the aid of the saliva ferments. This is an important question, for it is a fact that to-day the best candies in the world contain a large amount of glucose, while the most popular beer in the market has recently been shown to contain a larger proportion of glucose than any other brewed in this country.

If the truth of these results is confirmed by further investigation, it will show that the fear of glucose and pre-digested starch is not well founded.

Young, Hugh H.: Tracheotomy in Emergencies. (*The New York Medical Journal*, Vol. LXI., No. 17.)

The author describes an impromtu method of performing this operation in pressing need, there being no instruments at his command. The child was two and one-half years old, had been ill five days, and had received two injections of Behring's antitoxin. On the evening of the fifth day of the attack, however, the respiration became gasping, showing gradually increasing occlusion. A glass tube was found the size of a small lead pencil. This was twirled rapidly in the flame of a lamp till it could be bent to the proper curve for a tracheotomy tube. It was cut off by making a nick in it with a file, and broken over the thumb. The rough ends were rounded by holding in the flame. Cocaine having been injected in the median line of the neck, an incision down to the trachea was made with a pocket scalpel from the second tracheal ring downward for an inch and one-half. Hemorrhage having been stopped by hot compresses, an incision three-quarters of an inch long was then made into the trachea. The child was turned on its face to prevent blood from flowing into the trachea. Hemorrhage having ceased, the child was turned on its back and the bent glass tube inserted, and in a few minutes the breathing became more regular, the cyanosis disappeared, and the child went to sleep.

A second tube was made, wrapped with thread to prevent breaking, and fitted with a cross piece of wood half an inch in width and one inch in length, with holes cut in each end to receive tapes. This was substituted for the first one, having the advantage of holding itself in place. The child slept well all night, and made a quick recovery.

As tracheotomy wounds are always infected, it is the custom to allow them to heal by granulation, and not to bring the edges together by sutures. In this case, having been able to stop the suppuration by vigorous antiseptic treatment, the author drew the edges of the broad, gaping wound together with sutures. The result was very satisfactory; no stitch-abscess or any suppuration followed, and in place of a broad, ugly scar, a small linear one resulted.

It would seem that many unsightly scars from infected wounds about the face and neck could be avoided by suturing as soon as suppuration had been cured. In this case, the edges were well cauterized by nitrate of silver before being drawn together.

Voelcker, A. F.: Effects Produced by Caseous Bronchial Glands in Children. (*The Practitioner*, 1895, Vol. LIV., No. VI.)

The author describes several cases of great interest, and then refers to the possibility of perforation of the esophagus by caseous glands, and consequent tubercular infection of the alimentary tract. This, however, has rarely occurred among a large number of cases collected from several great London hospitals. Perforation into a bronchus was so frequently accompanied by an offensive odor of the breath that when hæmoptysis and fœtid breath co-exist, the presumption is that the glands are the source of trouble. If there is also vomiting of blood, and its passage by the bowel, the diagnosis of glands rupturing into the bronchus and esophagus is the most likely one.

With regard to treatment, little can be done. We should, however, remember the importance of these glands and the readiness with which they become the seat of tubercular infection, and be warned of the danger of neglecting vigorous treatment of pulmonary catarrh, especially that following measles or whooping cough. When we remember that great strain is thrown on those glands in all inflammatory states of the lungs and bronchi, and that this overtaxing of their powers leads to their diminished vitality, and to the possibility of tubercle finding a seat at which it can multiply, and from which it can infect both locally and generally, then we shall appreciate the necessity for suitable food, air, and clothing in the treatment of the convalescence from such diseases as measles and whooping cough, and not merely content ourselves with considerations of the question of infectiousness or non-infectiousness of convalescence.

When enlarged glands simply press up the trachea or bronchi, tracheotomy seldom renders relief, as there is spasm of the muscles of the tubes. When a gland ulcerates into an air passage, tracheotomy may be called for if the caseous mass be either free or only adherent by its capsule, but these cases are usually so urgent that the operation is done without a diagnosis being made as to the nature of the foreign body in the larynx. When there is reason to suspect destruction of lung tissue by an ulcerating gland, the prognosis is extremely grave.

Eshner, Augustus A.: A Case of Pseudo-Muscular Hypertrophy. (*Journal of Nervous and Mental Disease*, 1895, Vol. xx, No. 5.)

Cases of this character are, so far as known, due to disorder of the muscles, pure and simple. Its occurrence probably depends on some embryonic defect. The patient whose case is reported was a boy of ten and one-half years. No abnormality was noted until the child should have walked, which he then failed to do. For a time he was able to crawl, but has never been able to walk. For five years he has been using a tricycle. He appears bright and intelligent. The muscular inability has grown steadily worse. The legs and feet can be variously moved, though feeble. They are intensely cyanotic in some places, being deep blue in color and others pink. The muscles of the legs are full and firm, but not indurated. The movements of the upper extremities are fully performed, although the muscles are small.

Priestly, Joseph: Eucalyptus Disinfection in Scarlet Fever. (*Journal of American Medical Association*, Vol. xxiv., No. 18.)

Dr. Priestly, the well-known medical Officer of Health of the much quoted town of Leicester, Eng., details the results of his investigation of the use of eucalyptus oil as a disinfectant in scarlet fever—a method of treatment originally proposed and enthusiastically advocated by J. Brendon Curvengen, of Teddington. The treatment consists in carefully rubbing the whole body three times a day for three days, with a mixture composed of the oil of eucalyptus, thymol, camphor, and other aromatic disinfectants in solution. After three days, one rubbing each day is given after a warm bath. The results reported by the author are extremely good. Cases treated in the hospital are discharged one week earlier than ordinary cases, desquamation being distinctly hastened by its use.

Williams, J.: Cerebral Tumor in a Child of Eight Years. (*Medical Age*, Vol. xii, No. 10.)

The author reports the case of a child who was suddenly seized with complete motor paralysis of the left arm and leg, the muscles of the face and tongue not being affected. The condition remained practically unchanged for two months, when vomiting and persistent constipation supervened. The child gradually failed, and died from exhaustion sixteen weeks after the paralysis occurred.

Post-mortem examination revealed a small, hard nodule encapsulated by a tumor of semi-solid nature, one and a half inches in diameter, situate in the substance of the left hemisphere, at the beginning of the crus, and in turn surrounded by a yellow, creamy fluid; there was likewise a marked increase in the amount of cerebral fluid. No tubercular or syphilitic taint could be found to account for the tumor.

Shaller, J. M.: Treatment of Diarrhœa. (*Alkaloidal Clinic*, 1895, Vol. ii, No. 4.)

For diarrhœa accompanied by pain and colic, and for diarrhœa which follows immediately after meals, the author has found a combination of codenine and sulpho-carbolate of zinc efficacious. The combination also acts favorably in those cases in which pain follows immediately after eating and is accompanied by looseness of the bowels. He uses a tablet composed of one grain of sulpho-carbolate of zinc, one and one-fourth of a grain of codenine sulphate, together with a small amount of hyoscyamine and sulphate of strychnine. For children, one of these tablets is dissolved in water, the dose being adapted to the age of the child. The author believed that this combination not only prevents decomposition, but diminishes the secretion and checks peristalsis.

Cameron, Kenneth: Resuscitation of a New-Born Child by Rythmic Traction on the Tongue. (*Montreal Medical Journal*, 1895, Vol. xxiii, No. 12.)

The child, after birth, was limp and cyanotic; artificial respiration, slapping, applications of heat and cold alternately, kept up for about ten minutes, failed to cause a respiratory movement; a faint flutter, however, could be felt over the cardiac region. Rhythmic traction on the tongue was then practiced. The child being placed well over on its right side, the tongue was gently seized by a pair of Pean's forceps and forcibly drawn forward, and then forcibly shoved back, as far as possible in both directions. This was kept up at the rate of about 30 or a little more per minute. Hardly half a minute had elapsed, after beginning the traction, before the child gave an inspiration; in about another half minute a second one followed; after that they became gradually more frequent, and soon the child began to cry. The child has since been perfectly well.

Love, I. N.: Scorbutus in Infancy. (*Medical Mirror*, 1895, Vol. vi, No. 6.)

The author reports five cases occurring in his own practice. The first case had been fed for ten months with sterilized milk, largely diluted with barley water. The second child, a twin eight months old, had been fed with boiled cow's milk, largely diluted with plain water, and lime water. The gums were spongy and bled quite freely, although no teeth had erupted. There was extreme swelling of the thigh, and purpuric spots appeared in various places. The child died of exhaustion three days after the first visit. Its mate, though suffering from marasmus to an extreme degree, showed no scorbutic symptoms. Its condition rapidly improved, however, when the diet was changed to beef juice and fresh cow's milk, with the addition of orange juice. The third child was breast fed. Its mother, however, was receiving large doses of mercury for supposed syphilis. The breast milk was found to be of very poor quality. The child's symptoms were undoubtedly those of scorbutus. The child was weaned, and cow's milk and beef juice were substituted with the most favorable results.

Fleming, W. M.: Treatment of Intermittent Fever. (*Gaillard's Medical Journal*, 1895, Vol. xli., No. 5.)

The discovery of the plasmodium of malaria has explained the action of quinine in that disease, which until very recently had been used empirically. In the light of our present knowledge, the author points to the fact that it is absurd for the National Dispensatory to give a list of seventy-six remedies for intermittent fever. Quinine is so far superior to these remedies that no time should be wasted in seeking for a better one. Its method of administration is, however, important. As hepatic activity is necessary to obtain the best effect of this specific treatment, it is better to begin the treatment with a mercurial, particularly if constipation is present. Calomel administered in divided doses at short intervals is superior to all other methods of preparing the way for quinine. One-sixth of a grain of triturated calomel with an equal amount of bicarbonate of soda may be given to a child every fifteen minutes until six doses have been administered. When such treatment is employed a much smaller dose of quinine is effectual in breaking up the paroxysms. Calomel should be given about six hours before the specific treatment is commenced. Quinine should be administered so as to obtain its full physiological effect before the onset of the expected paroxysm. About three hours are required for quinine to attain its utmost activity in the body, hence a full dose should be administered three hours before the expected paroxysm. If the stomach will tolerate it the acid solution is best adapted to this purpose. To prevent unfavorable head symptoms, which accompany full doses of quinine, and also to relieve the pain which is frequently present during the paroxysm, five grains of antikamnia repeated every two hours are effective. The quinine should be continued in small doses for at least two weeks after the last paroxysm. If the patient is susceptible to its action and unpleasant results follow its use, antikamnia will do much to overcome them. In cases of undoubted malarial fever, quinine is so truly a specific and so much more effective than any other drug that every method of administering it should be attempted before its use is abandoned.

Proben, Charles I.: A Case of Floating Spleen in an Infant following Malaria. (*American Journal of Obstetrics*, 1895, No. 209.)

An infant two weeks old, apparently well and strong, was received at the Foundling Asylum, nothing being known of its family history. The baby gradually declined up to the ninth month, when it looked puny and was fretful. It was not at any time considered sick. It was then given to another woman to nurse, but the child did not improve. After a few weeks it was brought to the writer. There was then a swelling on the left side of the abdomen, which proved to be a freely movable splenic tumor of great size. Enormous enlargement of the spleen is so rare in children that it has been claimed never to exist. A slight enlargement is not uncommon. A diagnosis by exclusion rejected leucocythæmia and syphilis, leaving malaria the only possible cause for the trouble. Microscopical examination confirmed this diagnosis. Six grains of sulphate of quinine were given three times a day, and the treatment was alternated with fair-sized doses of arsenic. No toxic effects were observed, although the dose seemed large, and the infant has borne it well for nearly two months. The fever soon subsided; other symptoms vanished. The spleen gradually diminished in size, now being about twice the normal size; it can be gathered up between the fingers, and is freely movable to the left and upward. The author has found no record of any similar case in so young an infant, but thinks it may occur more frequently in the tropics than in his latitude, where intermittent fever is rare among young children.

Cook, G. Wythe: The Relation of Chorea and Rheumatism in Children. (*American Journal of Obstetrics*, 1895, Vol. xxxi., No. 208.)

The object of the author is to call attention to the probable identity of the cause of chorea and rheumatism as occurring in children. Statistics given by different writers show a relation between chorea and rheumatism varying from 25 to 75 per cent. of cases. Abarticular forms of rheumatism are very numerous in children. Under the name of "growing pains," they are too commonly neglected, being considered a necessary evil. The author believes that if these forms of rheumatism were also taken into account the relation of chorea and rheumatism would be much more conspicuous. The frequent occurrence of heart inflammations in connection with each of these affections would seem to indicate their common derivation. The author makes the practical suggestion that because of the great liability to cardiac complications in both diseases, all cases of chorea and rheumatism should be treated by as absolute rest in bed as it is possible to attain.

Buist, R. C.: Method of Artificial Respiration in the New Born. (*Edinburgh Medical Journal*, 1895, No. cdlxxix.)

Without entering upon a discussion as to the value of mechanical methods of artificial respiration, the author describes the following, which he has found from his own experiments to be effectual: Should stimulation of the buttocks or chest wall fail to elicit a vocal response, I clear the pharnyx and detach the child, and then place it face downwards on the palm of my right hand with the head away from me. The upper and lower parts of the body and the limbs are thus dependent over the edges of the hand. I then roll the child over, and at the same time transfer it with a slight throw to my left hand in the dorsal position, the legs and arms being again dependent. It is then re-transferred to the right hand in the first position, and the whole movement is repeated twelve to sixteen times a minute. Should there be any fear of chilling the child, the whole process may be carried out while the lower part of the body is immersed in a basin of warm water in front of the fire.

Popoff: Acute Nephritis in the Pneumonia of Children. (*Universal Medical Journal*, 1895, iv., 76.)

The author, in *La Médicine Moderne*, reports four cases in which acute nephritis occurred in the course of pneumonia. The first, a girl of twelve years, presented the symptoms when first seen on the eighth day. Recovery was complete. The second patient, a boy of five years, beside the symptoms of pneumonia, suffered from excessive dysphonia and general œdema. He left the hospital at the end of fifteen days, the albumen having disappeared. The third patient, a girl of six years, died soon after admission to the hospital. The autopsy revealed the presence of double pneumonia and acute epithelial nephritis. The fourth, a boy of twelve years, presented all the signs of nephritis in addition to the pneumonia. The autopsy showed double pneumonia and parenchymatous degeneration of the liver and kidneys.

From these four cases Dr. Popoff concludes that nephritis generally appears on the fourth or fifth day of the pneumonia, the most common symptom being bloody and scanty urine. Anuria or uræmia may supervene, but the casts and hæmatins generally disappear rapidly. The duration of the nephritis may vary from eight to seventy days, though the average duration is from fifteen to thirty days.

H. Toulmin: Pulsating Empyema in a Child of five years; Resection of a Rib; Recovery. (*University Medical Magazine*, 1895, Vol. vii., No. 2.)

The patient was a boy of five years. He had been perfectly healthy until the onset of pneumonia, which involved the left base posteriorly. In four days the whole lower lobe was involved and there was a slight area of consolidation of the upper lobe. There was then no evidence of pleurisy. Resolution took place slowly, and convalescence seemed to progress satisfactorily until the twenty-sixth day. For several days he had not gained in general condition, though the temperature was normal, and there were no chills or sweats. Physical examination revealed a pulsation in the second and third right intercostal space with dullness on percussion. There was also an impulse in the normal position of the apex-beat. Although the signs of fluid were positive, aspiration was refused by the parents until five days later; 400 CC of thick pus were then withdrawn. Pneumococci were found upon microscopical examination. Slight improvement was observed for a few days, when the symptoms again became more grave. Ten days later a rib was resected and thorough drainage was performed. Recovery was complete.

The interesting features of the case were:

(1) The close relationship of cause and effect between whooping-cough and pneumonia, and pneumonia and empyema.

(2) The infectious nature of pneumonia.

(3) The favorable termination of cases of empyema due to the pneumococcus.

(4) The practical prognostic value of bacteriological examination of the pleural contents in cases of effusion.

(5) The importance of surgical interference in empyemas, and the excellent results which follow.

(6) The abnormal area of pulsation.

Allen, A. R.: Acute Articular Rheumatism Complicated by Acute Endocarditis, followed by Gangrene of the Foot, in a Child. (*University Medical Magazine*, 1895, Vol. vii., No. 2.)

The patient was a girl of ten years, who presented the typical symptoms of acute rheumatism involving an ankle, knee and hip. On the third day acute endocarditis developed. On the morning of the fifth day a blister was found covering the toes and extending as far back as the juncture of the tarsal and metatarsal bones. Shortly after the rheumatic symptoms, which had been considerably relieved, recurred and continued for several days.

The foot was washed twice daily with a solution of permanganate of potassium. A few days later a slight separation of the gangrenous portion of the foot on the upper aspect occurred sufficiently large to allow the insertion of a nozzle of a syringe, and the parts were thoroughly irrigated twice daily for several days, when the sloughing had progressed so far that the dead portions could be clipped away. It was then found that healthy tissues extended forward to the base of the toes and to the second joint of the great toe. This being unexpected and gratifying, all ideas of amputation were abandoned. The separation of the gangrenous portion was now rapid. In a few days the bones of the toes were clipped from their tarsal articulation, excepting the two phalanges of the great toe, which were a few days longer in separating.

At the time of writing the foot has completely healed, except a small space over the second and third toe about the size of a five-cent piece. The child was in good condition physically, there only remaining as a reminder of her illness some thickening of the aortic valves and a slight limp in walking.

Hartzell, M. B.: Recurrent Scarlatiniform Erythema. (*University Medical Magazine*, 1895, Vol. vii., No. 11.)

The author reports a case of erythema closely simulating scarlet fever, with several recurrences. Owing to its close resemblance to a serious infectious disease the question of diagnosis is of more than ordinary importance. Such cases may be distinguished from scarlatina by attention to the following points:

The redness is apt to be diffuse instead of punctate.

The eruption instead of beginning upon the face, as in scarlatina, usually commences upon some part of the trunk and spreads rapidly to other parts.

Desquamation begins much earlier than in scarlatina, usually on the second or third day of the attack.

Throat symptoms are absent, or if present, are apt to be very mild.

The so-called strawberry tongue is absent.

There are never any symptoms pointing to the kidneys.

Finally, the repeated recurrence of the eruption will make the diagnosis plain.

The treatment must be carried out on general principles. In the writer's case the internal administration of the fluid extract of jaborandi seemed to influence the disease favorably, mitigating the itching and burning.

Stewart, J. Preves: Tuberculosis of the Tonsil. (*British Medical Journal*, 1895, No. 1792, p. 970.)

The case was one of ordinary enlargement of the tonsils, with pharyngeal adenoids, associated with post-scarlatinal otorrhœa and enlargement of the cervical lymphatic glands, in a child ten years of age. The scarlet fever occurred two and one-half years before, prior to which the child was absolutely healthy in every respect. There was no history of tubercle in the family.

The tonsils, on naked-eye examination, in no way differed in their appearance from ordinary chronically enlarged tonsils. The tonsillar crypts were unusually well marked, and here and there admitted the point of an ordinary probe.

On microscopic examination, however, the following appearances were found: The lymphoid tissue of the tonsil, covered on its surface by stratified squamous epithelium, was seen to be much sub-divided by the dipping down of folds of epithelium, forming crypts, in which lay masses of amorphous débris, containing numerous micro-organisms. Scattered through the substance of the lymphoid tissue were large numbers of tuberculous giant-cell systems, apparently most numerous close beneath the epithelial surface of the tonsil. These giant-cells were of the typical multinucleated form characteristic of tubercle, surrounded by the usual epithelioid and lymphoid cells. There was no overgrowth of connective tissue around these areas, nor, indeed, anywhere in the tonsil, but the stroma of the gland seemed here and there to have undergone hyaline degeneration. Staining by Jiehl-Niellsen and Yram's methods failed to demonstrate any tubercle bacilli in the sections.

The pharyngeal adenoids on section were found free from tubercle, and consisting simply of lymphoid tissue, covered by a layer of the columnar epithelium of the naso-pharynx. Some enlarged cervical lymphatic glands were subsequently removed from the same patient, and these, on section, showed typical tuberculosis in various stages of advance, from simple enlargement to caseation.

This case seems to show that the tonsil is more important as a channel of tuberculous infection than has hitherto been supposed; and when we regard the frequency with which it is attacked, and attacked successfully, by progenic organisms, it is not to be wondered at that the tubercle bacillus sometimes enters it and flourishes in its lymphoid tissue, a tissue which is *par excellence* a seat of tuberculous deposit.

Wolff, Bernard: Eczema in Infants and Young Children. (*Atlanta Clinic*, 1895, Vol. iii., No. 3.)

Eczema of children is usually of the seborrhœic variety. It originates generally in the scalp and spreads to other portions of the body, sometimes making long leaps without apparent bridge, the infection being probably carried under the finger nails. The disease is not incompatible with excellent general health, but is usually superinduced by digestive disorders, bad hygienic surroundings, or even dentition. Of the three causes, the first is of greatest importance; the skin, being but poorly nourished, cannot resist attacks of micro-organisms. Negro children are less susceptible to this disease than white.

Treatment looks first to improving the general condition. The author recommends the following local treatment: When eczema of the scalp is accompanied by crusting and matting of the hair together with pediculi, the latter with their ova must be destroyed at once by the use of fluid extract of larkspur, or equal parts of kerosene and olive oil. The hair must be clipped short and the crusts removed by soaking the head in chloroform and olive oil. When a clean surface has thus been obtained, resorcin in the strength of two to ten per cent. in olive oil or vaseline may be used. The application should be made continuous, and the head prevented from soiling bed clothes by wearing a cap of rubber or some other water-proof material. The scalp should be shampooed with spiritus saponatus kalinus (Hebra) once or twice a week, after active irritation has subsided.

In eczema of the face, the crusts should be removed with oil or vaseline; the diseased surfaces disinfected, and an ointment applied consisting of zinc oxide, one drachm; precipitated sulphur, four drachms; and vaseline and lanoline, each four drachms.

The sulphur may be increased or diminished according to the age of the child and the condition of the skin. Carbolic acid may be added to the above ointment if the lesions are pruriginous.

Upon eczema of the extremities, especially if pustulation and crusting be marked, ichthyol acts almost as a specific. It is used in the form of a ten per cent. ointment. The ointment is rubbed in with gentle friction once daily, after which the parts should be bandaged. In the most chronic cases with scaling, dilute tar wash may be used with advantage. The principles of treatment are based on the use of antiseptic and soothing, rather than stimulating applications.

Ray, J. Morrison: The Local Treatment of Diphtheria. (*American Practitioner and News*, 1895. Vol. xix., No. 3.)

The author summarizes his local treatment of diphtheria as follows:

1. Modern research having proved that diphtheria is primarily a local disease, local treatment must be immediately instituted on assuming charge of a case and making the diagnosis, and should be carried out day and night.

2. This treatment must aim at removal of all secretions and debris that may possibly contain the Loeffler bacillus, and destruction as far as possible of all bacilli contained in the pseudo-membrane.

3. The best local applications are bichloride of mercury and the preparation of iron, with possibly papoid and peroxide of hydrogen as adjuvants.

4. When the larynx shows signs of invasion, the use of steam and vapors increase mucous secretion, lessen swelling, and hasten loosening of the membrane.

5. Before and after resort to surgical methods, mercurial sublimations exert a beneficial influence on the false membrane, and by their disinfecting powers lessen the further complications that so often arise.

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Original Communications.

SARCOMA OF THE KIDNEY IN AN INFANT; TREATMENT WITH ERYSIPELAS TOXIN.*

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On January 12, 1895, Mrs. B. brought to my office her infant, aged thirteen months, for examination. The patient, a boy, was fairly well nourished, but presented a protuberance in the right lumbar region and hypochondrium. Nothing abnormal was to be observed elsewhere. The mother stated that she had first noticed the abdominal swelling about three weeks previously, but it certainly must have existed for a considerable period of time before it was observed by her. All the functions of the child were normal, physical examination of heart, lungs, spleen and liver was negative. Owing to the restlessness of the patient a careful examination of the abdominal enlargement could not be made at this time. In consequence a provisional diagnosis of an abdominal tumor probably malignant and probably connected with the kidney was made. The mother was directed to bring the child to the Children's Hospital of St. John's Guild in this city on January fourteenth, for the purpose of making a more exact examination under an anæsthetic and of permitting Dr. Abraham Jacobi to see the patient. Accordingly on that date the patient was brought to the hospital and having been put under chloroform anaesthesia by the house physician, Dr. M. Victor Safford, he was carefully examined by Doctors Jacobi, Mark Blumenthal, Safford, and myself. The hilum of the kidney could be distinctly felt turned toward the left and it was decided positively that the neoplasm was attached to the right kidney. Furthermore the conclusion was arrived at that the tumor was a sarcoma. The patient was a few days later exhibited by Prof. Jacobi to his class at the College of Physicians and Surgeons.

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*Read before the American Pediatric Society, Virginia Hot Springs, May 27, 1895, with presentation of the specimen preserved in Wickersheimer's fluid together with numerous microscopic slides from the tumor, kidney, and of other organs.

It will be in order to narrate to some extent the family history of the patient. The mother has always been healthy. She has had two previous children, respectively four and three years old. With this child she was in labor about twelve hours. All three labors were natural. The mother's parents are still living at the age of about sixty years. The father's mother is still living, but his father died when he was still a child and consequently he does not know the cause of his father's death. No member of the family has ever had a tumor. In neither parent are there evidences either of syphilis or of tubercular taint. I omitted to state that the right foot and leg began to swell about one week after the tumor was first discovered by the mother, that is about two weeks before the patient was first seen by me.

As the mother refused to leave the child at the hospital, the patient at the suggestion of Dr. Jacobi was placed upon Fowler's solution of arsenic, two drops, three times a day. At length, after having been thus treated at its home by me for a month, the mother finally yielded to my persuasions to leave the child at the hospital. He was admitted to the St. John's Guild Children's Hospital on February 12, 1895, in a condition practically unchanged from that of a month previous. The accompanying diagrammatic sketch represents the appearance of the abdomen very well at the date of his admission.

The photograph was taken after the child had been in the hospital for about two weeks. I beg to say just here that later on I shall give a table of comparative measurements of the abdomen made at different dates.

On February 16 a very careful analysis of the urine was made by Dr. Frank Grancle, pathologist to the hospital, with the following results. The chemical examination showed: Color, smoky; reaction, alkaline; specific gravity, 1012; albumen, 10 per cent.; sugar, none.

The microscopical examination revealed: Stellar phosphates, amorphous phosphates, granular matter, some red blood corpuscles, some pus cells, some epithelial cells, no casts. The urine was re-examined on four successive occasions, each examination disclosing the fact of a progressive increase in the percentage of albumen present. *Pari passu* the patient became weaker and weaker with a tendency to somnolency, accompanied by a general emaciation. On March 7 marked dyspnœa appeared, physical evidences of broncho-pneumonia were present, and cyanosis was apparent. His condition grew worse hourly and at 11.30 P.M. he expired. Before giving the report of the autopsy it will be more logical to speak of the treatment administered to the patient. As stated in an earlier part of this paper arsenic was given to the patient for a month, but with no appreciable results, beneficial or otherwise. At one of the regular consultations which

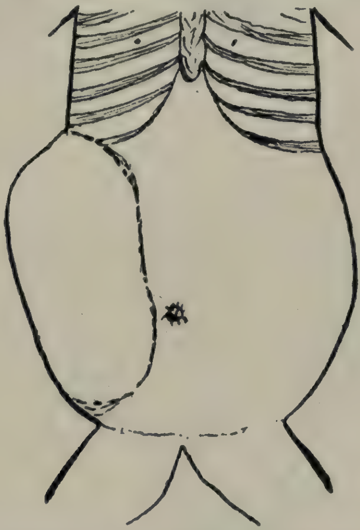
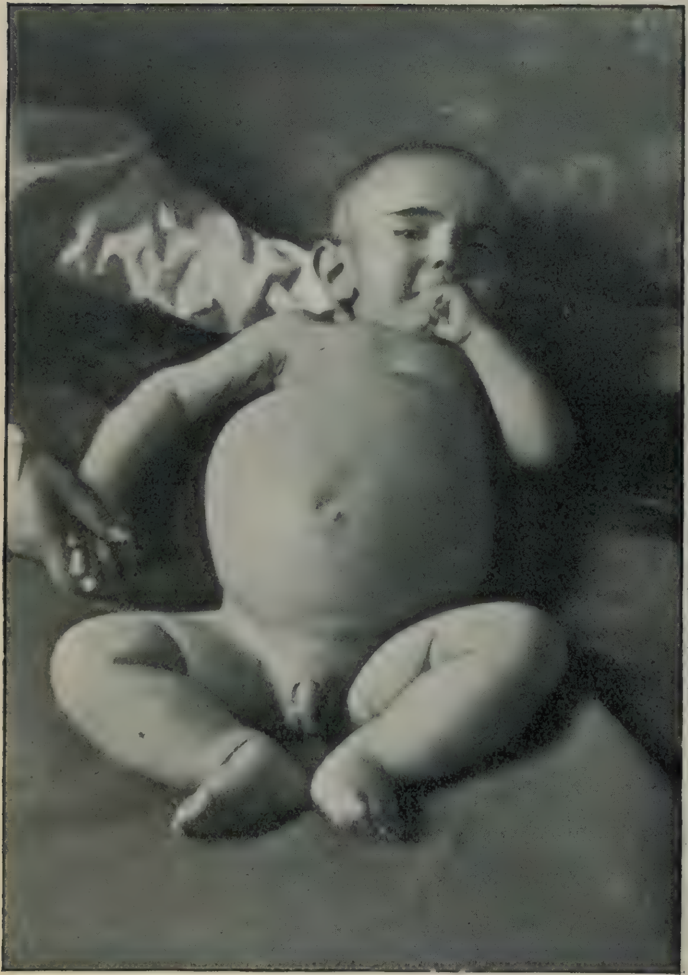


FIGURE 1.—APPEARANCE OF ABDOMEN AT DATE OF ADMISSION TO HOSPITAL, FEBRUARY 12, 1895.



SARCOMA OF THE KIDNEY IN AN INFANT OF THIRTEEN MONTHS—DR. FRUITNIGHT.

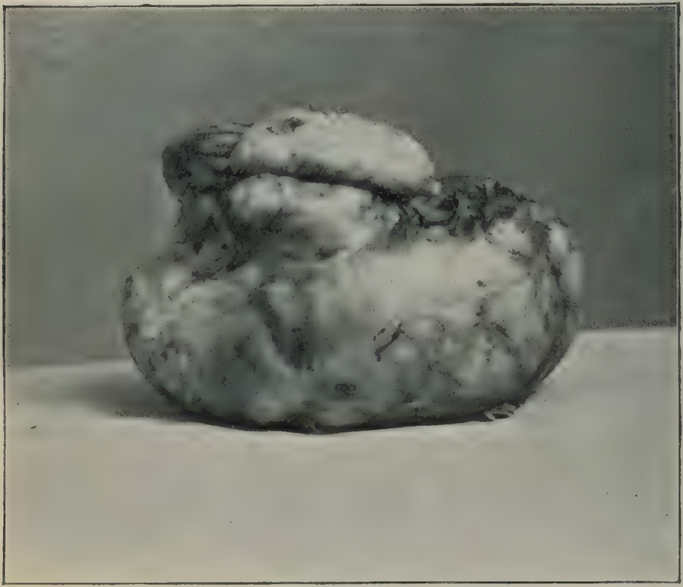
were held weekly upon the case, Dr. Dillon Brown, one of the visiting physicians to the hospital, suggested the employment of the toxin of erysipelas in the treatment of the patient according to the method introduced and advocated by Dr. Coley of New York City. Accordingly the treatment by erysipelas toxin which contained the *bacillus prodigious* was commenced on February 16, 1895. The first quantity of toxin fluid used was generously provided by Dr. Dillon Brown. At 10.30 A.M. three minims of the toxin were injected in the right gluteal region, the temperature being 99° and pulse 102. At 2.30 P. M. the temperature registered 100° and pulse 106, and at 6.00 P.M. the pulse was 104 and temperature 99⅘°. At 8.30 A. M. on February 17 the temperature being 99⅖° and pulse 102, four minims of the toxin were injected. I may say here that the injections were all done in the right or left gluteal region. At 2.30 P.M. the temperature was 98⅖° and pulse 100, and at 11.00 P.M. the temperature was 100⅕° whilst the pulse was 126. On February 18 at 10.20 A.M., eight minims of the toxin were injected, the temperature being 98⅗° and pulse 132. At 2.20 P.M. the temperature was 99⅕° and pulse 132, and at 6.20 P.M. the temperature was 99⅘° and pulse 122. At 9.45 A.M. on February 19, nine minims are injected deeply in the left thigh, the previous ones having all been injected into the right side. At the time of the injection the temperature was 97⅗° and the pulse 120; at 2.30 P. M. the temperature was 97⅘° and pulse 108; at 6.40 P.M. the temperature was 99⅕°, the pulse 108, and at 11.20 P.M. the temperature was 100° and pulse 120. On February 20, at 10.15 A.M., twelve minims of the toxin were injected in the left buttock, the temperature being 97⅗° and pulse 116; at 2.40 P.M. the pulse was 120 and the temperature 99°, and at 6.30 P.M. the temperature was 99⅖° and pulse 124, and at 10.20 P.M. the pulse was 132 and temperature 100⅗°. On February 21, at 10.10 A.M., twelve minims of toxin were injected into the left side, the temperature being 99⅗° and pulse 126; at 2.30 P.M. the temperature was 99⅗°, pulse 126; at 6.00 P.M. the temperature was 100⅕° and pulse 132, and at

10.10 P.M. temperature was 99° and pulse 120. On February 22, at 10.50 A.M., the temperature being $99\frac{4}{5}^\circ$ and pulse 138, eight minims of toxin were thrown into the left buttock. At 2.50 P.M. the temperature was $99\frac{5}{5}^\circ$ and pulse 132; at 6.30 P.M. the temperature was $99\frac{4}{5}^\circ$ and pulse 132, and at 10.30 P.M. the pulse was 128, temperature $98\frac{4}{5}^\circ$. On February 23, at 10.40 A.M., fifteen minims of the toxin were injected on the left side, the temperature being $100\frac{1}{5}^\circ$ and pulse 120; at 2.40 P.M. the temperature was 100° and pulse 102; at 6.00 P.M. the temperature was $100\frac{4}{5}^\circ$, the pulse 138, and at 10.00 P.M. the temperature was $99\frac{3}{5}^\circ$ and pulse 126. On February 24, at 10.40 A.M., temperature being $100\frac{2}{5}^\circ$ and pulse 120, seventeen minims of the toxin were injected in the left side. At 2.30 P.M. the temperature was 101°, the pulse 120; at 6.30 P.M. the temperature was 101°, the pulse 118, and at 11.30 P.M. the temperature was $99\frac{4}{5}^\circ$, the pulse 120. As the supply of toxin had now become exhausted the treatment was interrupted until March 1, when a fresh quantity of the toxin was received. Since the last injection of toxin the temperature had remained in the neighborhood of from 100° to 101°. At 8.45 A.M., March 1, two minims of the new toxin were injected in the left buttock, the temperature being $99\frac{2}{5}^\circ$ and pulse 124; at 1.30 P. M. the temperature was $99\frac{4}{5}^\circ$ and pulse 120; at 6.45 P.M. the temperature was $100\frac{1}{5}^\circ$, pulse 128, and at 11.35 P.M. the pulse was 132, the temperature 100°. March 2d, at 10.15 A.M., four minims of toxin were injected in the left side, the temperature being $99\frac{2}{5}^\circ$, pulse 130; at 2.30 P.M. the temperature was $100\frac{1}{5}$, the pulse 130; at 6.30 P.M. the temperature was $100\frac{1}{5}^\circ$, the pulse 132, and and at 10.30 P.M. the temperature was $99\frac{4}{5}^\circ$ and pulse 125. The patient now began to suffer from abdominal distension and had a loose cough; he also refused his food. March 3d, at 9.20 A.M., seven minims of toxin were injected, the temperature being at 99°, the pulse 122; at 2.30 P.M. the temperature was 100°, the pulse 122; at 6.30 P.M. the temperature was $100\frac{2}{5}^\circ$, the pulse 128. On March 4, at 9.45 A.M., temperature $99\frac{4}{5}^\circ$, pulse 120, ten minims of toxin were injected; at 2.00 P.M. the temperature was 100°, the pulse 122; at 6.45 P.M. the temperature was 100⅕, the pulse 126, and at 11.45 P.M. the temperature was 99⅕°, the pulse 136. On March 5, at 10.30 A.M., with temperature 99°, pulse 128, ten minims of toxin were injected in the left gluteal region; at 2.30 P.M. the pulse was 128, the temperature 100°; at 6.30 P.M. the temperature was 100⅖°, the pulse 130, and at 11.30 P.M. the temperature was 101⅗° and pulse 132. On March 6, at 10.00 A.M., with temperature at 102°, pulse 136, nine minims of the toxin were injected on left side; œdema very marked in both legs now. At 2.00 P.M. the temperature was 101⅗°, the pulse 140; at 6.45 P.M. the temperature was 100⅖, the pulse 140, and at 10.45 P.M. the temperature was 100⅕°, and pulse 136. On March 7 his condition was so critical that digitalis and whiskey were liberally administered to the patient, and no injection was given, and as previously reported, death occurred at 11.30 P.M. His nourishment consisted mainly of milk, with the addition at times of barley, gruel and beef tea. Stimulants were not indicated until the last day of his existence. Later in the course of this paper I shall take occasion to make some remarks on the treatment of sarcoma with the toxin of erysipelas.

I shall now revert to the findings revealed at the autopsy. The autopsy was made by the pathologist to the hospital, Dr. Frank Grauer, in the presence of the hospital staff at 5 P.M. on March 8, 1895, seventeen and one-half hours after death. Before describing the post mortem conditions I will state the comparative measurements which were alluded to in a previous part of this paper:

Circumference	On Jan. 12	On Feb. 18	On Feb. 25	On March 4
At ensiform cartilage,	15 in.	17½ in.	17½ in.	17½ in.
" 2 in. below "	17¼ "	20½ "	20½ "	23 "
" 4 " " "	19½ "	22½ "	23 "	24⅛ "
" 6½ " umbilicus,	18 "	21½ "	22 "	22½ "
At crests of ilea,	16¾ "	18½ "	19 "	20⅛ "
From ensiform cartilage to symphysis pubis,	9⅞ "	10 "	10¾ "	11½ "

At the time of the autopsy the body was much emaciated, there was atrophy of the muscles of the upper extremities and chest. The length of the child was 27 inches. The circumference of the abdomen at the level of the umbilicus was 23½ inches, at the iliac crests 18½ inches. The circumference of the chest was 17½ inches. There was slight œdema of the lower extremities. Ecchymosis of testicles and inner sides of thighs extending back to the arms, along the entire surface of the back and on right side of neck, most probably post mortem imbibition. On opening the abdomen it was observed that a large mass of the size of a child's head occupied the right side of the cavity dipping down into the pelvis and extending upward on the right side higher than the normal position of the kidney. The intestines were somewhat congested. The descending colon, the lower portion of the small intestines, part of the cæcum, the whole vermiform appendix and portions of the mesentery were adherent to this mass. Subsequent examination showed that the



SARCOMA OF THE KIDNEY.

tumor was also firmly adherent to the abdominal wall, the bladder and the walls of the pelvis by means of its capsule, out of which it could be peeled without much difficulty, though the capsule was quite friable and tore easily. The tumor, which was photographed, weighed 4½ pounds. It measured in its longest diameter 7¾ inches, a diameter at right angles to this measured 5½ and a diameter traversing its largest prominence was 6½ inches. The abdominal cavity contained a considerable quantity of clear fluid.

The intestines were congested in spots, and the follicles at the ileo-cæcal valve were enlarged. The stomach was normal and contained partially digested milk.

The liver extended far below the borders of the three lower ribs, its left lobe extending to the left over the epigastric region and covering the greater portion of the stomach. On the right side the liver extended upward to the third intercostal space. Its lobules were rather pale in sections. In the right pleural cavity clear fluid was found, but none in the left. The left lung showed slight œdema, but no bronchitis. The upper lobe of the right lung disclosed evidences of a broncho-pneumonia whilst the middle and lower lobes were in an extreme state of hypostatic congestion with spots of broncho-pneumonia.

In the pericardial sac there was a considerable quantity of clear fluid. Fluid blood was found in both right and left ventricles. The left auricle contained a post mortem clot. All the valves of the heart were normal and perfect, though there were ecchymoses along the mitral and tricuspid valves. The myocardium was normal and healthy. The spleen was apparently normal. The right kidney was involved in the mass of the tumor. The left kidney was much compressed by the tumor. It was more than twice as large as normal and weighed four ounces. Its capsule was slightly adherent. On section, there was evidence of slight thickening of the cortical substance with loss of striæ. The pyramids were well marked.

The occipito-frontal circumference of the head was 18 inches. The dura mater was thickened and firmly adherent to the calvarium. The pia mater showed slight congestion. The brain itself was well formed, of decided symmetry, with well defined convolutions. It weighed 32½ ounces avoirdupois. There was a slight ante-mortem extravasation in the upper part of the superior frontal sulcus of the left side. No fluid was found in the ventricles. Spots of ecchymosis were detected here and there in the brain substance.

I will now speak of the results of microscopical examinations of the tumor and of other organs, these having been carefully made and recorded by both Dr. Frank Grauer, the pathologist of the St. John's Guild hospital for children, and Dr. Henry Power, of the pathological laboratory of the College of Physicians and Surgeons, New York City. To Dr. Power I am indebted for the accompanying illustrations of the microscopic appearance of the tumor. Cutting into the tumor, it presents a lobulated appearance, the lobules as well as the bands of connective tissue between them varying in size. The lobules are soft and of a whiteish hue similar to that of the white brain tissue. Scattered throughout the new growth are a number of cyst cavities of varying size, but which do not contain any fluid. In the centre of the growth is an irregularly shaped cyst cavity into which projects a process of the tumor reddish in color and measuring four inches in length and two and one-half inches in width. The lower segment of the growth, which resembles the cerebellum in shape and relative position to the whole mass of the tumor, is composed of the kidney which measures three by two by one and one-quarter inches. Kidney tissue seems to extend in an attenuated condition over the growth to the extent of about three inches. The cut surface of the kidney discloses the fact that its cortical substance is somewhat thinner than normal. A cyst of about the size of a small chestnut is found in the pyramidal substance. The pelvis of the kidney is dilated and measures nearly three-quarters of an inch in diameter. The ureter can be traced in the growth near its outer edge for a distance of more than six inches. The tumor apparently takes its origin in the pelvis of the kidney.

A section of the unaffected kidney shows that most of the malpighian bodies are enlarged and that they completely fill the capsule. The convoluted tubules are also enlarged and are filled with proliferated cells and granular matter. In some of the spiral and convoluted tubules the epithelial cells are very much swollen. In the upper part of the pyramidal substance the straight tubules appear normal, but as we pass along to the apex we observe that the tubules disappear and are replaced by newly-formed connective tissue.

On section of the kidney attached to the tumor, all the appearances of a chronic diffuse nephritis are revealed. There are present a round cell infiltration and an increase of connective tissue between the convoluted tubules. Certain malpighian bodies are completely destroyed. In some of the convoluted tubules is found a proliferation of the epithelial cells and in others a disintegration or even a total destruction of the same. Hyaline and granular casts are found in some of the tubules. The straight tubules are for the most part destroyed and replaced by newly-formed connective tissue.

A section of the tumor and kidney combined discloses an alveolar structure filled with round cells. The walls of the alveoli are formed of connective tissue, in which are seen here and there the remains of the uriniferous tubules. The kidney portion shows increased connective tissue with destruction of the tubules.

A section of the tumor taken from that portion close to the pelvis of the kidney shows that it is composed of round cells among which are a few spindle-shaped cells, and what is most interesting and noteworthy, large bundles of *embryonic* striated muscle *cells* in various stages of development intermixed with many-shaped cells of probable connective tissue origin. These striated *embryonic* muscle *cells* were closely studied and appear in Figure 1 reproduced from a photograph taken with an immersion lens and of 500 diameters magnification. Compared with the normal adult striated muscle the following points of difference are noticed:

The striations are more widely spaced, the nuclei far more large and numerous and the cells shorter, often tapering and always more narrow than the adult form.

A section of the lower part of the tumor shows it to be composed of round cells and a large amount of glandular tissue. The glandular tissue here resembles that found in an adenoma and is not like the tubules of the kidney. The same may be said of glandular tissue in a section taken from the middle of the neoplasm well seen to the right in Figure 2. Here, however, part of the section is composed of a large mass of round cells and part of a mixture of nearly *adult* striated muscle *fibres* as seen (in Figure 2, the low power picture) at the left, and in the high power picture reproduced in Figure 3.

In these muscle fibres the nuclei are slightly in excess over an adult fibre, but no other differences exist.

A fifth section from the outer part of the tumor showed a large amount of necrosis in which a few striped muscle fibres could be distinguished. Section of the lung revealed the presence of broncho-pneumonia. Sections of the heart, liver, spleen and thymus were normal. The intestines showed a slight infiltration of Peyer's patches.

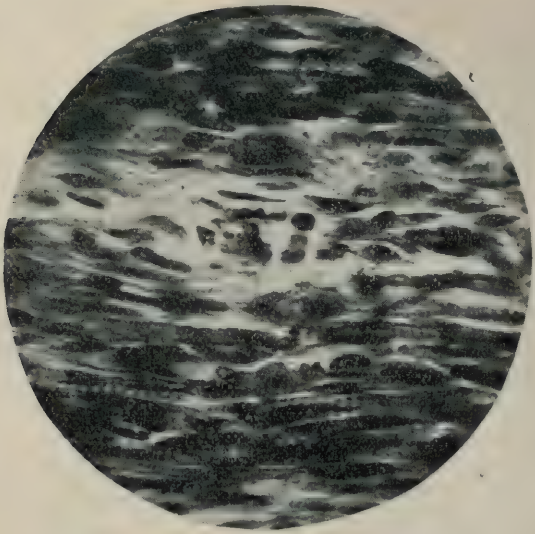
The microscopical diagnosis of the growth is therefore a Rhabdomyoma, showing adenomatous tissue in parts.

At several consultations participated in by Drs. Jacobi, Leale, Blumenthal, Brown, Thurman, Tompkins, and the writer, the question of operation was discussed. Though operation was inclined to be looked upon with favor by some of the participants in the consultations, among others the writer, it was finally decided not to subject the patient to an operation, inasmuch as the tumor had reached such a large growth that adhesions were probably very extensive and possibly dangerous to detach, as we were ignorant of the consistency and resistance of the point of attachment with the chance of causing secondary infection by disseminating the sarcomatous cells in case the attachments of the tumor were friable as they turned out to be in this instance, as the .sudden withdrawal of so large a mass from the abdominal cavity might result in speedy death from shock and the rapid removal of pressure from the large intra-abdominal vessels as some times happens after the operation of *paracentesis abdominis*, and as there was a possibility of a recurrence of the growth.

J. Bland Sutton, assistant surgeon to the Middlesex Hospital, London, in an article published in Vol. III. of the *Clinical Journal* (1894) says, "The removal of a renal sarcoma is a useless proceeding," basing his opinion on the results of twenty-one operations which he had collated. These operations were recorded by skilled operators in American, British, French, and German periodical literature. Of these twenty-one cases, nine recovered from the operation and twelve died from the results of the operation. The nine who recovered from the operation died within one year from recurrence and most of them within six months afterward. Although so eminent an authority as J. Bland Sutton has written thus, the most recent reports of cases of renal sarcoma which have been subjected to operation are much more favorable and warrant us to advise operation in these cases.

Among others a case almost exactly similar to mine is reported in the *Centralblatt für die Krankheiten der Harn und Sexual Organe*, Vol. XV., 1894, by Dr. L. Görl, of Nuremberg. The illustrations accompanying the report reproduce almost exactly the condition of affairs existing in my case, the right kidney also being the one affected in his case. Nephrectomy was performed eight months after the appearance of the first symptoms, and the patient had gotten entirely well eight weeks after the operation.

As has been said in an earlier part of this paper recourse was had to the treatment of the sarcoma by the injection of the toxin of erysipelas as introduced and advocated by Dr. R. W. Coley, of New York City, when it was definitely decided to forego operation. In the record of that method of treatment, as previously detailed, it will have been remarked that the reactionary fever always occurred sooner or later after the injection of the erysipelas toxin had been given. This was the only effect that was observed, its influence on the size or course of the growth or upon the general condition of the patient was



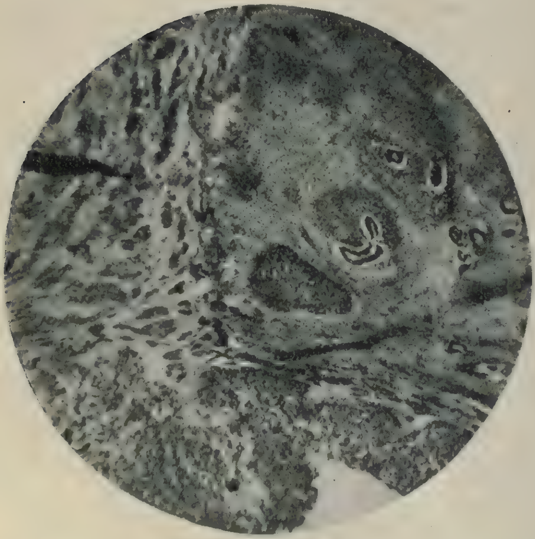


FIGURE 1. From photograph with oil immersion lens and with a magnification of 500 diameters, shows above and below masses of embryonic striated muscle cells in longitudinal section.

FIGURE 2. From photograph with 50 diameters magnification, shows adenomatous tissue to the right, striated muscle to the left and round cells below.

absolutely *nil.* In reviewing the cases recorded by Dr. Coley, in which he obtained successful results with his method, it will be observed that in all the cases the sarcomata were located externally as on the chest, back, clavicle, abdominal wall, palate, hand, sternum, breast, and so on, all locations accessible to treatment applied in the immediate radius of the disease. None of the cases reported are of internal visceral origin or attachment.

This may explain why the results have been so flattering in his hands. It is held by good men, Dr. A. R. Robinson among others, that any foreign substance injected into or near the substance of a sarcoma will be apt by setting up degenerative changes in the neoplasm to effect its cure and removal. It is plausible to assume that this is why the erysipelas toxin acts so favorably in sarcomata, which are external and accessible, and cannot act thus on visceral sarcomata because of their inaccessibility.

Renal sarcomata are tumors of very early life and are probably congenital; thus Windler reports thirty-seven cases, fifteen of which occurred in infants under two years old and five of these were under one year, whilst one case was met with in a fœtal kidney.* They are usually unilateral, yet sometimes bilateral. They are generally incapsulated and are composed of round and spindle-shaped cells, in which clusters of tubules occur. These tumors seldom invade the parenchyma of the kidney, being more frequently attached to the organ (usually to the capsule or pelvis), causing absorption and atrophy of its tissue. These tumors are nearly always of rapid growth.

In an article published by Dr. Paul Wagner, Dozent at the University of Leipsic, the principal symptoms indicative of a malignant tumor of the kidney are recounted in the order of their importance as follows: †

First and chiefly are the evidences of a hard, solid tumor or mass, having its attachment to the kidney.

Second, are the changes in the composition of the urine,

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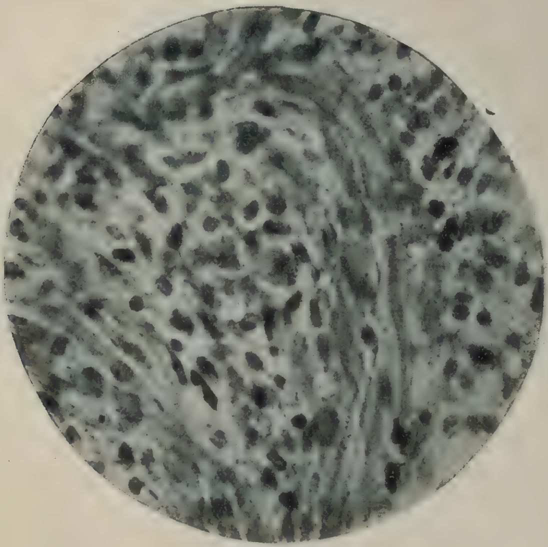
*Sarcoma of the Kidney, by Dr. B. C. A. Windler, *Journal of Anatomy and Physiology Normal and Pathological*, Vol. xviii. London. 1884.

† *Centralblatt fur die Krankheiten der Harn und Sexual Organe*, Band xv., 1894.



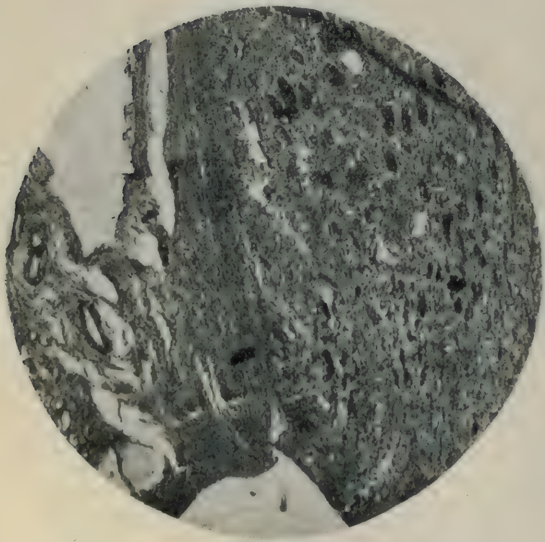


FIGURE 3. From photograph taken as in Figure 1, shows striated adult fibres irregularly arranged and mixed with cells of various shapes.

FIGURE 4. From photograph taken as in Figure 2, shows to the right diseased kidney tissue attached to a cystic portion of the tumor on the left.

particular stress being laid upon the presence of hæmaturia which was fully treated of by Dr. A. Seibert, our colleague, in *Das Jahrbuch für Kinderheilkunde*, Band xxi., published in 1884, and upon cellular elements of the tumor, which have been detected in the urine in exceptionally few cases indeed.

Third, is the presence of a progressive cachexia, most rapid in medullary carcinoma and round-celled sarcoma.

Fourth, is the subjective symptom of pain in the region of the kidney.

In closing, I can not refrain from alluding to the excellent article which was up to that time the most complete paper relating to the subject on primary sarcoma of the fœtal and infant kidney, read by our fellow-member, Dr. A. Jacobi, at the Eighth International Medical Congress held at Copenhagen in 1884, and in which attention was first directed to the differentiation between renal sarcoma and carcinoma.

161 WEST FIFTY-SEVENTH STREET.

DISCUSSION.

Dr. L. Emmett Holt: Dr. Fruitnight has overlooked two cases occurring in my service at the Baby's Hospital and operated upon by Dr. Robert Abbe, who has reported them in full. In one case the child was thirteen months old and the tumor weighed seven pounds. The child eighteen months afterwards was well. The second case, a child of ten months, was followed for sixteen months and was also still well. It seems to me that to conclude that such cases are not to be operated upon is to go against some excellent results attained. In one of Dr. Abbe's cases there was considerable shock, but the child made an uninterrupted recovery.

Dr. William Osler: The case reported in my Lectures on Abdominal Tumors remains well now more than two years after the operation. The tumor was very large and the child stood the operation remarkably well. I would ask Dr. Fruitnight in what respect he regards this tumor as unique histologically?

Dr. Fruitnight: The presence of unstriped muscle fibres.

Dr. Osler: Both striped and unstriped fibres may occur, as in the two cases which I reported shortly after Cohnheim's original communication.

Dr. A. Jacobi: The reason why the baby was not operated upon was that it was very much reduced in strength when we first saw it. One of the cases I published in 1884 was of the same description. I should agree with those more in favor of operating. Quite a number of cases have since been reported as having been successful. The sooner the operation is performed, the better. As a rule, for a long time only one kidney is affected and there are no metastatic deposits.

Dr. Fruitnight: Have any of the gentlemen present had any experience with the anti-toxin of erysipelas in the treatment of sarcoma?

Dr. Jacobi: I had the opportunity of using the blood of erysipelas, but not for a sufficient length of time. I used ten drops of blood from the cutis with twenty drops of normal salt solution injected every few days. The temperature would rise from 103° to 105° and remain at that point from six to eight hours. I only did this six or eight times when the erysipelas patient died, but during that time the sarcoma appeared to be getting smaller.

Dr. Fruitnight: In closing, I merely wish to put myself right in regard to the question of operating. I am not opposed to the operation; the gentlemen seemed to misunderstand me on that point.

◆

Perityphlitis in Children.—According to investigations made by Dr. W. Schaefer (*Deutsche Medicin. Wochenschr.*) the opinions of authors differ as to frequency of perityphilitis in children. Labadie maintains that children seldom suffer from this disease, while Soltmann regards it as frequent as in adults. Parker thinks that in children abscess formation is less common, but gangrene and perforation of the appendix much more frequent. As a rule, perforation is followed by an acute general peritonitis rapidly terminating fatally. Schaefer, however, has noted a localized peritonitis in the ileo-cæcal region due to perforation of a fecal concretion. An abscess formed which later perforated, and led to death. The cause of the perforation is usually a fecal calculus. Among thirty-seven cases Matterstock found foreign bodies in only three. Among exciting causes of the disease the chief external injuries are falls, blows, kicks, and for this reason boys are principally attacked. The course of perityphilitis in children is usually rapid and fatal. Adhesions and abscesses rarely develop. The treatment is the same as in adults, with surgical interference when required.—*International Jour. Surgery.*

A CLINICAL STUDY OF CASES OF ANGINA RESEMBLING DIPHTHERIA IN WHICH THE BACILLI ARE REPORTED ABSENT.*

BY E. M. BUCKINGHAM, M.D.

Boston.

Since the application of bacteriology to the study of diphtheria it has been questioned whether the cases in which the diphtheria (Klebs-Loeffler) bacilli are not found are really due to them or are cases of some other disease. There is nothing unreasonable in supposing them to be overlooked as is, we know, sometimes done, or that the membrane has outlasted the bacilli. It is also conceivable that there may be a disease of different etiology, but presenting identical appearances in the throat. It is, therefore, my purpose to study clinically the cases occurring in my last service in the diphtheria ward which were reported to be without these bacilli. In making this report I wish to express thanks to Dr. John L. Morse, who made many more examinations than the pathological department of the hospital had time for, who made clinical examinations of many of the cases, comparing notes with me afterward, and who in some instances visited patients' houses in search of information. No case referred to in this paper received the serum treatment, and all reported appearances in the mouth were recorded before the use of any local treatment.

There were a few cases in which bacilli were reported absent for a number of successive examinations, but in which they were afterward found. These may have become infected in the ward; but as we cannot know this to be true, none of them have been considered. There were twenty-four cases in which these bacilli were never found. Because of my then ignorance of the ease with which they may be overlooked, nine cases were insufficiently examined. These have been thrown aside and fifteen remain to be considered. No case is retained in which there was not an examination on entrance, a second within two days, and a third previous to discharge. The number of examinations in individual cases ranges from three to nine. Cultures were made from more than one place at a single examination, as from both nostrils, both tonsils, the uvula, and the pharynx, but not all these regions were explored at a single examination. It is proposed to consider these cases with reference to temperature, vomiting, chill, pain, circulation, enlarged glands, coryza, condition of mouth, and length of stay in the hospital.

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* Read before the American Pediatric Society, Virginia Hot Springs, May 27, 1895. Published also in the Reports of the Boston City Hospital, Sixth Series, 1895.

Perhaps it is not out of place to consider the normal temperature of diphtheria. Any kind of chart is sufficiently common in a diphtheria ward, but I believe that as a rule a high temperature means the presence of some complication. The temperature often rises with increasing dyspnœa. Patients occasionally have a certain rise, apparently from excitement when entering a hospital for any disease. Such a rise is generally of short duration. I have seen in a general ward temperatures of 102° and 103° in nervous children; due, I thought, to this cause alone, but these were extreme cases. Slighter rises from this cause are common with children. All the diphtheria records in Vol. 18 of the contagious service and the first half of those in each Vol. 19 and Vol. 20 have been studied. All cases were thrown out if there was a record of sepsis, consolidated lung, cough, otorrhœa, operation on the throat, or other evident cause for fever. After this was done the charts of the accepted cases were studied. There were sixty-seven such cases of uncomplicated diphtheria. In twenty-two the temperature did not reach 100°, and in fifteen more did not exceed it. Including these there were fifty-two cases of the sixty-seven in which the temperature did not exceed 101°, and fifteen in which it did. It reached 102° in thirteen cases only. In one of these the rise was apparently due to menstruation, while five were children in whom the second reading was 100° or lower, as were all subsequent readings. Of the remaining seven cases, one died the day after admission. In two the brilliant red of the throat suggested scarlet fever, which was a common complication at the time, although these cases had no rash, and four times the temperature above 102° could be attributed to nothing but uncomplicated diphtheria. In one of these four the fall to 99° came on the second day and in the others sooner. It is possible that some cases with low temperature had a higher one at first, but that it fell before admission. I have a few private records of cases in which the bacilli were detected in which there was a rise, the maximum temperature being 102°, and the fall immediate. Some cases, with other diseases, developing diphtheria in the hospital have had a rise of a few degrees with the initial symptoms, but of short duration; others have had no appreciable rise.

Among the fifteen cases without bacilli, the temperature on admission was below 100° in five cases, did not exceed it in seven, did not exceed 101° in nine, and exceeded 102° in four cases. One of those below 100° was said to have had fever outside the hospital. There is no very remarkable difference in the percentage of these two series until we come to the higher groups. Of temperatures over 102° there were exactly as many in the one series of fifteen cases as in the other of sixty-seven, after making allowance for probable causes of disturbance. These probable causes of disturbance did not exist in the smaller series. The high temperatures remained high for from two and a half to four days after admission, six to ten days after initial symptoms.

The pulse is recorded as strong or good in thirteen of the fifteen cases, which is contrary to all my own experience in diphtheria, cases sick enough to be recognized having almost invariably weak, compressible pulses. Coryza existed in five cases; in three of them it was slight. Cervical glands were enlarged in thirteen cases; in some slightly, in some considerably. In two of the four cases with highest temperature, the enlargement was slight, and in another it was doubtful. All cases had membrane; that is what sent them to the hospital; sometimes it was little, sometimes much. Tonsils and uvula were sometimes swollen, sometimes not; sometimes reddened, sometimes not. Tongue is reported red or coated with red edges in six cases,—nearly half the whole; but red is a comparative term, and while seeing the cases I had no suspicion of any such general redness. In one case, however, it is recorded as deep red, and in another as dark red with a thin film on the back. Redness is seldom mentioned in the records of the cases with bacilli, although their tongues are often described with some fulness. One throat is described as much inflamed, with little membrane; another, much swollen, with little membrane; another, much injected, with little membrane; another dark angry throat with little membrane; another, tonsils very much inflamed and swollen, with little membrane; another, throat injected with small patches on palate; yet another suggested follicular tonsillitis after the second day. Perhaps the rather general injection and swelling of the throat, together with little membrane in so many cases, and the presence of at least two highly reddened tongues, just suggest one of the acute exanthemata.

Vomiting occurred three times and nausea once, although but three of the patients were less than sixteen years old. But one of the children vomited, and in her case, as with one of the adults, this symptom was severe. Too much importance should not be given to this symptom or to chill, headache, or other pain, each of which was present in two or more cases; because, although they are of trifling importance in most diphtherias, although they bear no comparison to the same symptoms in other diseases, yet careful questioning will show that they do sometimes exist to some degree.

One of the patients had kissed his child four or six days before admission, she having at the time diphtheria with intubation and scarlet fever with desquamation. Two patients were nurses in the scarlet fever ward. One of them had never had scarlet fever, but had been in this ward for months. The other had been assigned to duty there but a few days before her sickness. Her previous history is unknown. At this time there were scarlet fever patients in that ward with diphtheria bacilli in their throats. A fourth patient was taken sick on the same day with her sister, both having severe vomiting. The sister had very few bacilli on her first examination, although they increased rapidly.

One patient desquamated on the seventh day of the disease. She could have contracted scarlet fever in the ward where she had been five days, but if so it was without fever. In another, there was a suspicion of desquamation.

These fifteen cases of apparent diphtheria grouped about the single peculiarity of absent bacilli present as many high temperatures as more than four times as many cases in which the bacilli were found, and the temperature remained high for rather long periods. The heart was all but invariably, unusually strong for a diphtheria heart. There was on the whole an amount of redness and swelling in the mouth out of proportion to the membrane. Three of the fifteen patients are known to have been exposed to scarlet fever. Another case, otherwise one of the most suspicious with regard to temperature and vomiting, was taken sick on the same day as her sister, who had similar symptoms, and who had had very few bacilli at her first examination, this first examination being made in the diphtheria ward. One patient desquamated, he being otherwise one of the least suspicious in the group. In another patient, with much membrane and low temperature, there was a suspicion of desquamation.

Fifteen patients are a small number on which to formulate general rules. There is, however, perhaps some warrant for the strong suspicion, not certainty, that most of these cases were scarlet fever, with absence of or transitory rash. That the variations of scarlet fever are so innumerable adds force to the suspicion, as does the fact that that disease was very prevalent at the time. This suspicion was not entertained until the records were studied together, although I doubted these cases being diphtheria.

Three patients had traces of albumen in the urine. This is stated as a fact, not as throwing light on the question under discussion. All recovered. The longest stay in the hospital was thirty-six days. This patient was retained long after she would otherwise have been discharged, because of a certain pallor of the tonsil, which may have been due to treatment, but which is seen after sore throats of all descriptions and all sorts of treatment. The next longest stay was twenty-two days, for desquamation. The next longest, seventeen days, was in a woman who furnished nothing to the composite picture of scarlet fever unless a record of red tongue be such. She had five negative bacteriological examinations. Another patient with five examinations was discharged on the fourteenth day. The other eleven patients went out in from three to seven days after admission.

The cases analyzed are Vol. 18, pp. 174, 224, 250, 252. Vol. 19, pp. 4, 72. Vol. 20, pp. 8, 114, 130, 166, 190, 230, 268. Vol. 21, pp. 14, 34.

Some of the bacteriological examinations are recorded only at the laboratory.

The Infection of Tuberculosis.—M. Bec has published an interesting account of what he calls epidemic tuberculosis, occurring in three small places among the Alps; the one village had a population of 481, the other two were hamlets with populations of fifty-one and forty-six respectively. In the first place (the village), tuberculosis was imported in the person of a young man, aged eighteen, suffering from phthisis. He infected a young girl and a man with whom he was frequently in contact, and in ten years eighteen previously healthy persons died of tuberculosis.

In the second place (the hamlet of fifty-one inhabitants), two soldiers returning from the Franco-German war, both suffering from tubercle, appear to have introduced the malady. Both these soldiers died, and in a short time the mother, a brother, two sisters of the one and two sisters of the other soldier all died of phthisis, as well as four other persons—in all ten out of the fifty-one.

In the third hamlet tubercle was introduced from Marseilles in the person of a young girl who had been nursing a tuberculous aunt. From January to October, in a single year, four other persons died of tubercle, all of whom had opportunities of coming into contact with the first case.

Such small isolated communities afford excellent opportunities for the study of infectious maladies.—*Clinical Sketches.*

TETANUS OF THE NEW-BORN.*

BY J. LEWIS SMITH, M.D.,

New York.

Premonitory symptoms of tetanus in the new-born are in many cases absent, or so slight as to escape notice. In some cases fretfulness precedes the attack, but no more than is often observed in those who continue in good health. The first symptom which alarms the parents and shows the grave nature of the commencing disease is inability to nurse, or evident pain and hesitation in nursing. Commencing with rigidity of the masseters, the disease gradually extends to the other voluntary muscles, and in the course of a few hours the muscles of the limbs as well as of the trunk are involved. Persistent muscular contraction, which is the pathognomonic feature of infantile tetanus, is developed not fully in the beginning, but by degrees in each affected muscle, so that it is not until after the lapse of several hours, perhaps even a day, that the greatest amount of rigidity is attained. Therefore in the commencement of the disease the limbs can be flexed and the jaw pressed open more readily than at a subsequent stage, though with manifest pain to the infant.

During the period of maximum rigidity the jaws are fixed almost immovably, often with a little interspace between them, against which the tongue presses and in which frothy saliva collects. The head is thrown backward and held in a fixed position by the stiffness of the cervical muscles. The forearms are flexed; the thumbs are thrown across the palms of the hands, and are firmly clenched by the fingers; the thighs are drawn toward the trunk; the great toes are adducted and the other toes flexed. Occasionally opisthotonos results from the extreme contraction of the dorsal and posterior cervical muscles. The infant can sometimes be raised without any yielding of the muscles by the one hand under the occiput and the other under the heels.

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*Read by title before the American Pediatric Society, Virginia Hot Springs, May 27, 1895

The rigidity is liable to variations in its intensity even after the full development of the disease. If the infant be quiet, especially if asleep, the muscles are partially relaxed to such an extent sometimes, in the first stages of the complaint, that the features have a placid and natural expression, though only for a short time. Frequent exacerbations occur in the muscular contraction, sometimes without any apparent cause, and sometimes produced by anything which excites or disturbs the child. Attempts to open the lips or jaws or eyelids or to bend the limbs, blowing on the face, and even the crawling of a fly upon it, occasion the paroxysms.

During the paroxysm the eyelids are forcibly compressed, as well as the lips, which are either drawn in or are pouting; the forehead and cheeks are thrown into wrinkles and the physiognomy is indicative of great suffering. The unnatural positions of the trunk and limbs which result from muscular contractions are increased for the moment; the head is more forcibly thrown back and the limbs more strongly flexed. The muscular movements which occur during the paroxysms are sometimes described as clonic spasms. There is indeed occasionally some quivering of the limbs, and yet, as I have on different occasions noticed, so far from the muscular action being a clonic spasm, it is clearly tonic and is intensified during the paroxysm. In fatal cases the paroxysms occur more and more frequently until the period of collapse.

The crying of the child affected by tetanus is never loud, however great the suffering. It is variously described by writers as "whimpering" or "whining." It is of this suppressed character in consequence of the rigid state of the respiratory muscles and their imperfect movement.

During the exacerbation respiration is suspended, or so imperfect and the circulation so retarded that the surface becomes of a deep red, almost livid, color. Sometimes epistaxis occurs, affording partial relief to the congestion, and sometimes, though less frequently, the blood forces itself from the congested liver along the umbilical vein and escapes from the umbilicus. The intense, passive congestion consequent upon the tetanic spasm is general throughout the system, but extravasation of blood appears to be more common around the brain and spinal cord than elsewhere.

The frequency of the pulse and respiration varies in different cases and at different stages in the same case. They are often somewhat accelerated, but at other times are natural, or are even slower than in health.

While the appetite of the infant, to appearances, is not diminished, the pain which it experiences in nursing is such that alimentation is necessarily deficient. It can be fed with a spoon for a time after it ceases to take food in the natural way, but artificial feeding soon fails. The milk placed in its mouth is in great part pressed back through the violence of the spasm which is induced by the attempt to feed it.

In consequence of imperfect nutrition the infant rapidly wastes away. There is no other disease, except the diarrhœal affections, in which the emaciation is so rapid.

The condition of the intestines is not uniform. They may be relaxed, particularly if the disease be due to some irritation in them; in other cases the stools are natural or constipated.

It is often difficult to ascertain the state of the eyes, since attempts to open the eyelids bring on spasms and cause firm compression of the lids against each other. According to Sir Henry Holland, one of the first symptoms which occurred in cases on the island of Heimacy was strabismus, with rolling of the eyes. But this statement must be received with caution, since these cases were not seen by any physician and the information was obtained from the parents and priests. If true, the proximate cause of the disease in Heimacy would seem to be located in the cerebro-spinal axis. Contraction of the pupils commonly occurs in the stage of collapse.

Death in infantile tetanus may occur from apnœa in the paroxysms, from extreme congestion of the cerebral vessels, or apoplexy; and, lastly, it may occur from exhaustion. The last mode is probably the most frequent.

All writers, till recently, agree that tetanus of the infant rarely terminates favorably. Cullen attributes the ignorance of physicians in regard to this disease to the fact that it is so little amenable to treatment that they are not usually summoned to attend those affected with it. In the island of Heimacy, of 185 cases occurring during a series of years about the commencement of the present century, not one survived; and in the same locality, at Westmannoe, a small islet, 64 per cent. of all the infants born died of trismus.

Yet death does not always result: eight of the forty cases in my collection recovered; but a correct opinion cannot be formed from this of the actual ratio of favorable to unfavorable cases, since favorable cases are much more likely to be published. In the history of these eight cases two interesting facts are noticed, which, when presented, may serve as a ground for hope of a successful termination. These were, the age at which the disease began and the fluctuations of the symptoms. With two exceptions, the infants who recovered were about a week old when the initiatory symptoms appeared, and there were fluctuations in the gravity of the symptoms; whereas fatal cases ordinarily grow progressively worse. Yet in favorable cases the symptoms are never so severe as they become in a few hours in those who succumb.

Of eighteen cases observed by Finckh in the Stuttgart Hospital, fifteen died in two days, two in five days and one in seven days. During the epidemic in the Stockholm hospitals in 1834, where forty-two cases were treated, the disease seldom lasted more than two days. Romberg says: "It generally lasts from two to four days, but its duration is at times limited at from eight to twenty-four hours, and occasionally, though rarely, it extends from five to nine days.

In thirty-one fatal cases in my collection in which the duration is mentioned,

1 lived	3 hours.
11 others lived	1 day or less.
12 lived	2 days.
4 lived	3 "
3 lived	4 "

Both Underwood, who published a treatise on diseases of children in 1789, and Dr. Elsässer at a more recent date, recorded fatal cases which were unusually protracted. The one described by Underwood was treated in the British Lying-in Hospital, and, although all the others treated in this institution died by the third day, this lived six weeks; but it is suggested by the author that death was due in part to some other affection. The child treated by Elsässer lived thirty-one days.

In the eight favorable cases in my collection the duration of the disease, reckoned from the time when the infant ceased nursing till it began again, was as follows: In one case, two days; in one, a few days; in one, fourteen days; in two, fifteen days; in one, twenty-eight days; in one, twenty-one days; and in the remaining case, about five weeks.

To one who has seen this disease in the new-born or is familiar with its symptoms a diagnosis is easy. The symptoms which possess diagnostic value are more manifest and reliable than in most other infantile maladies. Permanent rigidity of the voluntary muscles, with temporary exacerbations, such as have been described above, which are induced by any cause which disturbs the infant, as attempts to open the mouth or eyelids, is pathognomonic.

Let us stop for a moment and consider the facts related above which have a bearing on therapeutics:

(1) With possibly a few exceptions tetanus, whether occurring in man or animals, whether in the infant or the adult, is the same disease, and is caused by the entrance into the system of a rod-shaped microbe two or three times the length of the tubercular bacillus. One end of the bacillus is somewhat rounded, so as to give it a pin-shape, and is enlarged by the presence of a spore.

(2) The tetanus bacillus, as stated above, thrives most luxuriantly, and probably is most virulent where dirt and filth abound. We have said also that its natural home is the soil, and not so much the virgin soil as soil which is rendered impure by the proximity and drainage of barnyards, and especially horse-stables.

(3) Of the domestic animals, the horse and, to a less degree, the sheep are liable to tetanus, and hence those

who are exposed by their occupations to these animals or to the soil infected by their excretions are more liable to tetanus from injuries, even from slight bruises or wounds, than are those whose occupations do not bring them into constant contact with these animals or with infected soil.

(4) We have stated that the bacillus of tetanus is widespread, so that this disease occurs in every climate, from the Arctic regions to Demerara or Bombay. But this bacillus, like that of diphtheria, has remarkable vitality and power for propagation, so that it has continued for an indefinite time to survive and multiply in certain localities, as in parts of Long Island, notwithstanding constant tillage.

(5) As regards tetanus neonatorum, the observations which I have related show beyond doubt that in most instances the specific bacillus obtains entrance into the system through the umbilical blood-vessels and lymphatics, and within these vessels the toxin described and analyzed by Brieger and others, and which is so fatal, is produced.

While tetanus neonatorum, if fully developed, is ordinarily fatal in spite of any remedial measures heretofore used, there is no doubt of the efficacy and value of preventative measures when properly employed. This was shown by the great reduction in mortality in the Dublin Lying-in Hospital through the thorough ventilation introduced by Dr. Clarke. Dr. Meriwether, of Montgomery, Ala., says: "When the disease appears endemically on a plantation it may be arrested by having the negro houses whitewashed with lime inside and out; by raising the floors above the ground; by removing all filth from under and about the houses; by particular attention to cleanliness in the bedding and clothing of the mother and in the dressing of the child, so as to prevent any of the matter from the umbilicus lying long in contact with the skin." Many physicians, especially in the Southern states, speak confidently of care in dressing the cord and attention to the umbilicus as a means of preventation. Graften says that he has "never known the disease to occur in any child whose navel had the turpentine dressing." He uses turpentine as follows: "At the first time a few drops of undiluted turpentine are applied immediately to the umbilicus around the cord, and it is anointed at every succeeding dressing, the turpentine being diluted one-half or two-thirds with olive oil, lard, or fresh butter." This use of turpentine has also been recommended by other practitioners in warm regions.

Dr. John Furlonge, of St. John's, Antigua, believes that no case would occur with the following treatment: "The cord, when divided, should be wrapped in clean linen. Every night for two weeks one or two drops of tinct. opii and spts. vini, equal parts, should be given, and castor oil, with a little magnesia, every morning. The child must be washed in tepid water every morning and the funis dressed." If this treatment be attended by the success which is claimed for it by Dr. Furlonge, so great care in dressing the cord is certainly well repaid in localities, as at Antigua, where a large proportion of the infants die of tetanus. But since it is now known that tetanus neonatorum, like that at a more advanced age, usually has a microbic origin, an antiseptic and germicide dressing of the cord is evidently preferable, as by filling the umbilicus and dusting the cord with aristol.

Some experienced observers go so far as to assert that it is possible to ward off tetanus neonatorum after the occurrence of premonitory symptoms. Dr. Dowell says: "Some with slight twitchings of the muscles have recovered without any trouble by being put into a mustard-bath, washed clean and put in a clean and well-ventilated cabin."

In considering the effects of medicinal agents which have been employed in the treatment of infantile tetanus, the great difficulty which the child experiences in swallowing should be borne in mind. Without care a considerable part of the dose is lost by the spasm of the muscles of deglutition, which ordinarily occurs when the spoon is placed in the mouth, so that, unless special attention be given to this matter, it is uncertain whether the prescribed dose is fully administered.

The treatment employed by different physicians has been very diverse. Antiphlogistic remedies were prescribed by Finckh, but every case so treated was fatal. He states that whenever blood was abstracted, even in small quantities, the symptoms were aggravated. The same result has followed depletory measures in the practice of other physicians. The internal remedies which have been most frequently prescribed are opiates and antispasmodics. Furlonge, in a favorable case, gave laudanum in doses of one drop every three hours alternating with two grains of Dover's powder. Woodworth also gave one-drop doses of laudanum; Eberle, one-sixth of a drop hourly. The opiate has generally been given in combination with an antispasmodic. The Dover's powder given every three hours by Furlonge was combined with five grains of sulphate of zinc. The hourly doses of laudanum by Eberle were combined with six drops of tincture of asafœtida.

When anæsthetics began to be employed in the treatment of diseases it was believed that they would be especially useful in cases of tetanus. Accordingly, chloroform has been used in tetanus in the infant, with the effect of controlling the spasm during the time of its use, but without curing the disease. Anæsthetics certainly relieve the suffering of the infant, and on this account, even if they do not prolong life, their judicious employment seems proper.

The remedy which has been more efficient than those mentioned above has been the hydrate of chloral, given with or without one of the bromides. Since the introduction of this agent into therapeutics it has been employed by several physicians in the treatment of this disease with so good a result that it will probably supersede all other medicines for this purpose. Dr. Widerhofer, of Vienna, states that he has saved six out of ten or twelve by the use of chloral. He prescribes it in doses of one or two grains by the mouth, or, if there be great difficulty in swallowing, two or four grains by the rectum. Dr. F. Auchenthales relates a case in which he gave even six-grain doses, and in nine days the disease had entirely disappeared. I have recently employed hydrate of chloral in a case of tetanus, giving it in half-grain or one-grain doses every two hours, except when there was profound sleep. The disease was fully developed and the symptoms severe when I was called. I did not believe that the infant, with the old remedies, would live more than two days, but by the use of chloral life was prolonged nearly one week. Moreover, by the use of chloral the suffering of the infant is greatly diminished. The frequent inhalation of sulphuric ether also aids materially in controlling the spasms. The administration of alcoholic stimulants is required at short intervals on account of the rapid emaciation and great prostration.

Local treatment directed to the umbilicus in those cases in which there is evidence of inflammation of the umbilicus or umbilical vessels should not be neglected. The application of an emollient poultice to the umbilicus has been followed by apparent improvement, if we may believe the statement of some physicians who have made use of this treatment. Dr. Meriwether, of Alabama, says if there be no improvement from the medicine which he orders he applies a blister, larger than a dollar, to the umbilicus, and with this treatment the child generally improves—a remarkable statement, since so few improve at all.

No one can fail to observe the need of early and continuous antiseptic treatment of the umbilicus, as in septicæmia. Aristol, iodoform, boracic or salicylic acid should be constantly and as deeply applied in the umbilical fossa as possible, mixed with a liquid, perhaps glycerin, to make it penetrate more deeply.

A warm foot-bath, repeated at intervals of a few hours, and stimulating embrocations along the spine, are proper adjuvants to the treatment.

The apparent encouraging results of the treatment of diphtheria by the subcutaneous injection of the serum of an animal rendered immune to this disease by repeated inoculations led to observations and experimentation to determine whether a similar treatment might be useful in tetanus. We have seen how the bacillus of tetanus can be propagated and obtained in the flask of the chemist, and it is easily communicated to the horse by inoculation. Tizzoni and Cattani, followed by others, have employed the antitoxin treatment of tetanus. It is obviously best, in order to determine its efficiency, to learn the results of its use, whatever the age, for it is the same disease in infancy, childhood, and adult life.

Escherich reports four cases of tetanus neonatorum treated by Tizzoni's antitoxine. The following are the statistics of these cases: In the four cases the umbilical cord was detached on the sixth, third, fourth, and fourth days; the incubation was two, nine, one, and seven days; the duration, two, five, two, and twelve days. The fourth or last case only recovered. In all who died septic inflammation of the umbilical cord was present, and all exhibited septic symptoms. A little of the tissue at the umbilicus, taken from the bodies of the first and third cases and inoculated in mice, caused tetanus in them. In Case 1, (fatal) only 0.015 by 2.0 of antitoxic serum was injected; in Case 2, (fatal) the injections of 0.25 were discontinued on account of the occurrence of septic pneumonia; in Case 3, (fatal) the tetanus was exceptionally severe, so that a good result could not be expected. In the case that recovered an injection (0.3) was given on the third and twice on the fourth day.

In the *British Med. Journ.*, January 19, 1895, the case of a man is related who was injured by a catapult and six days afterwards began to have tetanic symptoms. The wound was half an inch below the symphysis of the lower jaw and gave rise to a foul discharge containing shreds of string and shoemaker's wax. Trismus, inability to open the mouth, prominence and rigidity of the muscles of the neck and back followed. The symptoms gradually increased, and on the third day of the tetanus 2.5 grammes of Tizzoni's antitoxin, in sterilized distilled water, were introduced by punctures in the abdominal walls. Each puncture was painful and was attended by strong opisthotonic spasms. On the following day, October 7, or fourth day of the tetanus, 1 gramme (fifteen grains) was injected. On each of the following days, October 8, 9, 10, 11, 12 and 13, either one-half or one gramme (seven and one-half or fifteen grains) was injected, but none was used on the 15th. On October 16 his tongue was caught between the teeth and could not be released by the attendants. Violent and almost continuous spasms followed, with laceration of the tongue and great dyspnœa. When the patient appeared to be dying, grain $\frac{1}{50}$ of physostigmine and grain $\frac{1}{2}$ of morphine were injected, and in less than a minute the masseters were so relaxed that the lacerated tongue was released and the lividity, dyspnœa and violent opisthotonic spasms ceased. On this eventful day the antitoxin was not employed, so that forty-eight hours elapsed without its use. On October 17, 18 and 19 one gramme each day was administered and on October 20 half a gramme. From this time the patient steadily improved.

Mr. Marriott, who reported the above case, summarizes the treatment as follows: "Antitoxin, with the exception of the three injections of the physostigmine and morphine, was the only remedy used in this case, as, though chloral was at first prescribed, only a very small quantity was swallowed. The patient certainly seemed much relieved by the treatment, and it is to be remarked that the severe and nearly fatal relapse occurred after the diminution of the dose on October 14 and its suspension on October 15. He states also that the two injections of physostogmine and morphine when given together had a most salutary effect in diminishing the spasms.

In the same number of the *British Med. Journ.* a case is related better adapted to our purpose, for it is one of tetanus neonatorum treated with tetanus antitoxin, reported by Mr. Firth. The infant was born on September 18, 1894, and after ligation of the cord the navel was dressed with a clean piece of linen. On the sixth day it was dressed with a scorched piece of linen soaked in castor oil. On the eighth day the infant was fretful and took the breast with difficulty. On the eleventh day after birth or fourth of the disease it was admitted into the Bristol General Hospital, and on the fifth day of the disease it was more carefully examined. It was icteric; its eyelids tightly closed, the conjunctivæ could not be seen; the face was wrinkled; no risus sardonicus; masseters hard; lower jaw rigidly fixed; head slightly retracted; neck and spine very rigid; arms and forearms adducted and rigid; fingers firmly flexed into the palms, and thumbs firmly flexed over them; it swallowed with great difficulty, and became cyanotic when a little milk was placed in the mouth; spasms, lasting three or four minutes and beginning and ending gradually occurred; temperature normal or slightly subnormal; pulse 128, resp. 36; chloral hydrate gr. ½ and potas. bromide, gr. 1 to 2, were administered every four hours.

On the sixth, seventh and eighth days no improvement occurred, but spasms of tonic muscular contractions severe, and attended by cessation of respiration and very frequent, weak, or inappreciable pulse were present. At one time it was thought to be dead. On the eighth day of the disease the tetanus antitoxin was employed, six grains being injected under the skin of the abdomen in five places. On the ninth day a similar injection was made at 4 P.M., and the third at 8.30 P.M. On the tenth day the patient had eight of the spasmodic attacks of muscular rigidity lasting from five to fifteen minutes, and the longest suspension of respiration in the attacks was seven minutes. A last injection of twelve grains of tetanus antitoxin was made at 1 P.M., and death occurred at 8 P.M.

It will be seen that the infant had four injections of the antitoxin, two grammes or thirty grains in all, without any appreciable controlling effect on the tetanus.

From the above cases, and from others of a similar nature which have been published, it appears that the tetanus antitoxin, in order to be efficient, must be used early, and more observations are required in order to ascertain what power it possesses in the treatment of tetanus even at an early stage. The tetanus antitoxin, like that of diphtheria, is still on trial, and many more observations will be required before its efficiency is determined. With or without this new remedy it is evident that the hydrate of chloral, with perhaps one of the bromides, should still be employed.

The method of preparing and using the antitoxic serum is as follows: The toxin employed for immunizing the horse is prepared in a flask containing grape-sugar bouillon and hydrogen, in the manner described by Mr. Hewlett, which I have already related. The toxin of tetanus prepared in this manner in the flask of the chemist is such a powerful poison that in employing it to immunize the horse by subcutaneous injections it is first diluted by admixture with an equal quantity of Gram's iodine solution. Hewlett in immunizing the horse employed three injections weekly, beginning with .5 c.cm., and gradually increasing to 8 c.cm. or 10 c.cm. from May 2 to June 22, after which Mr. Hewlett gradually diminished the diluent until the pure toxin was employed on and after July 2, but sometimes with dangerous symptoms. "On July 25 4 c.cm. were injected into the jugular vein, followed by rather alarming symptoms half an hour after, the animal falling prostrate with legs extended, labored respiration and rapid small pulse." The animal recovered in ten minutes. As in preparing the diphtheritic antitoxin, the horse should receive these injections about three times weekly for three to six months, but before immunized serum is placed in the hands of the physician or pharmacist it should be tested upon animals.

Mr. Hewlett writes in reference to the antitoxic serum of the horse properly prepared as follows: "Experimentally, the effects of the antitoxin are little short of marvellous. Minute doses injected into animals will completely neutralize fatal doses of the tetanus toxin injected eight or twelve hours afterward. Mixtures of the toxin with the antitoxin serum in proportions of forty or fifty parts of the former to one of the latter are completely inert, and two cubic centimetres of such a mixture, containing nearly 2 c.cm. of the deadly toxin, may be injected into a guinea-pig without producing any effect. The antitoxin also possesses considerable curative power, but much larger doses are necessary when the disease has declared itself than when used as an immunizing agent."

"The antitoxin treatment of tetanus would seem to be the one which gives the best hope of cure. . . I have been able to collect records of forty-two cases of tetanus treated with antitoxin, nearly all traumatic, and of these fifteen died and twenty-seven recovered, giving a mortality of about 36 per cent."

TYPHOID FEVER IN CHILDREN UNDER TWO YEARS—IS IT FREQUENT?*

BY W. P. NORTHRUP, M.D.

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New York.

This communication was intended to open and call forth a discussion upon the above subject. On account of the absence of the writer the title of the paper was presented and there was no discussion. A few facts forming the basis of the proposed paper are here presented.

Typhoid fever is a disease to which there is little susceptibility in children under two years. In epidemics children, under two years of age, though naturally little susceptible, may by the presence of an overwhelming poison succumb to typhoid fever.

As to the occurrence of typhoid fever in children under two years as ascertained from hospital records, reports have been obtained from the following hospitals: New York Foundling Hospital, New York Infant Asylum, Philadelphia Children's Hospital.

The New York Foundling Hospital, being the largest, is put first. There is no record of typhoid fever in a child under three years of age in a period extending back rather more than twenty years. The records are vouched for and corroborated by the personal experience of Drs. J. Lewis Smith and Jos. O'Dwyer. My own experience as pathologist and attending physician covers a period of thirteen years and includes two thousand autopsies on children under five years of age. It may be added that the institution from which this experience was gained has continuously eighteen hundred children under its care varying in age from one day to three and five years. Of this number eleven hundred are "out boarding" up to the age of three years. They are distributed about New York City, Staten Island, and all the cities and towns in the immediate vicinity of New York, including Jersey City, Hoboken, Williamsburg, Astoria, Brooklyn, and Westchester County. When any of these "boarded out" children are taken sick, they are at once brought to the hospital and remain till restored to health. It is clearly evident that this is a wide distribution of children. The ten-dollars-a-month nurse does not enjoy especially hygienic surroundings, and from these same districts adults suffering from typhoid are frequently finding their way to general hospitals of the city, not a few of whom have come under my personal care in three successive Septembers and Octobers at the Presbyterian Hospital. Furthermore, Dr. O'Dwyer and myself discussed the absence of typhoid fever at the Foundling Hospital ten years ago and have literally been looking for it ever since.

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*Read by title before the American Pediatric Society, Virginia Hot Springs, May 27th, 1895.

Non-epidemic typhoid fever cannot be of frequent occurrence in children under three years of age, or these eleven hundred children, sprinkled over a large area where typhoid fever is known to exist sporadically, must have brought home to the hospital at least one case in thirteen to twenty years.

Dr. Henry Page, Jr., Resident Physician of the Children's Hospital of Philadelphia, in a pertinent letter placed at my disposal by Dr. Wm. B. Noyes, writes as follows:

"I received your letter this morning and I surely thought I could give you several cases of typhoid under three years, but upon examining the records I find that no such case has occurred since histories have been kept in this hospital. I have had from six to ten typhoids in children in the house ever since I came on duty here, but not one of them was under six years. This fact may be of use to you, however, as a proof of the rarity of the disease in patients so young. This is said to be the largest children's hospital in America, and yet in recent years not one typhoid below three years has been admitted."

Dr. Charles G. Kerley, formerly Resident Physician of the New York Infant Asylum, writes: "During my four years' term of service at the New York Infant Asylum, Mt. Vernon, New York, thirteen hundred and twenty-six children came under my care. Of these ninety-five per cent. were under five years of age, and eighty-five per cent. were under two years of age. Four hundred and ten died, upon all of which autopsies were made and not once were the lesions of typhoid found. There never was a case of typhoid at the asylum during my service."

Dr. S. K. Bremner, the succeeding resident physician at the New York Infant Asylum, in an oral communication, reported a similar experience. His three years service with Dr. Kerley's makes seven consecutive years' experience in a very large institution. Dr. Bremner reports that in his service of three years there was no case in the institution on which, from the clinical observations, or from clinical observations and autopsy, one could justify a diagnosis of typhoid fever.

From the testimony of these three large hospitals the statement would seem justifiable that typhoid fever occurring sporadically in children under two and even three years of age, is rare.

Idiot Skulls.—Sir George Humphrey has examined nineteen specimens of idiot skulls, and finds nothing to suggest that the deficiency in the development of the skull was the leading feature in the deformity, and that the smallness of the bony cerebral envelope exerted a depressing or dwarfing influence upon the brain, or anything to give encouragement to the practice lately adopted, in some instances, of a removal of a part of the bony case, with the idea of affording more space and freedom for the growth of the brain.—*Lancet.*—*Practical Medicine.*

The Prevention of Contagious Diseases in Schools.—With a view to the further prevention of contagious diseases among the children of the public schools, the Board of Health of New York has ordered the discontinuance of the use of slates, sponges, and common drinking cups. It has also established a rule requiring that all school books shall be re-covered with fresh paper at least once a month.

TWO CASES OF TETANY.*

BY FLOYD M. CRANDALL, M.D.

New York.

It is not my intention to enter upon an extended discussion of tetany. Although two of our members, Dr. J. Lewis Smith and Dr. J. P. Crozier Griffith, have written most scientific and complete papers upon the subject, it has not been presented before this society. I venture to report, therefore, two cases which have recently come under my observation.

The first case presented striking features and decided peculiarities. I was for some time in doubt as to whether it was in reality a case of tetany. Although it presented many anomalous features, symptoms gradually developed which were characteristic of that disease. Dr. Griffith in his admirable paper published in the American Journal of Medical Sciences in February of this year, gives the following definition:—" A disease consisting of tonic spasms either continuous or paroxysmal; usually symmetrical; affecting especially the extremities, but often widespread or sometimes confined to one limb; not accompanied by unconsciousness and not depending upon any irritating lesion of the brain, cord, or nerves, or upon hysteria." This definition clearly describes my cases.

The first patient was a boy whom I first saw on June 28th, 1893. He was then two weeks old and was suffering from severe colic. The attacks of colic were repeated in milder form occasionally during the summer, but he had at no time a convulsion and was an ordinarily healthy child.

I next saw him on December 22d, 1893, he being then six months old. He was suffering from bronchitis of a rather severe type and green watery diarrhœa. The mother remarked that for two or three days the baby had developed a peculiar habit of occasionally staring at her in a vacant way. One week later the bronchitis had much improved and the diarrhœa had disappeared. The peculiar stare which the mother had noticed had become more frequent and pronounced. Five or six times during the day the staring expression would be noticed, but would immediately pass away. For a day or two there had been slight twitching of the extremities.

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*Read by title before the American Pediatric Society, Virginia Hot Springs, May 27, 1895.

On January 19th, four weeks after the first symptoms had been noticed the bronchitis and cough had entirely disappeared. There was slight constipation, but no marked evidence of indigestion. The nervous disorder had, however, steadily increased. The paroxysms were occurring six or seven times a day and were severe. The patient was referred to Dr. Landon Carter Grey. He found no evidences of organic lesion nor of nephritis or kidney disease of any kind and no indican in the urine, for which he looked with especial care. As there was slight adherence of the prepuce he advised its correction, and after this was done to await results as he found no other probable exciting cause.

On January 23d I saw the child in a paroxysm. The first symptom appeared in the eyes which showed a fixed stare, the pupils being slightly dilated, equally and evenly. Quickly following this was the appearance of general convulsive movements, affecting the extremities chiefly and the face but slightly. The arms were drawn closely to the sides and the hands were swung around across each other. The wrists were strongly flexed and adducted. The fingers were bent at the metocarpo-phlangeal articulation, but were extended at the other joints. The thumb was flexed into the palm and the index and little fingers were drawn more strongly inward, giving the hand a very peculiar cone-shaped appearance. The legs were adducted and the feet extended, causing the instep to arch over in a typical carpo-pedal spasm. The tension over the instep was extreme. The head was drawn somewhat forward, the muscles of the neck standing out rigidly.

The spasm was tonic in character, being somewhat remittent. There were seven or eight distinct paroxysms, each being more severe than the preceding, with a slight relaxation between them. There was no *complete* relaxation during the paroxysm which lasted one and one-half minutes or possibly longer. The child was certainly not unconscious. Near the height of the paroxysm there was a slight whimpering cry as if from pain. The respiration was somewhat labored and seemed to render a full cry impossible. The tension of the instep and intense contractions of the wrists were certainly sufficient to cause pain. The spasm when it had reached its height relaxed rapidly and the child at once recovered itself and in two minutes appeared perfectly well. He never at any time showed a tendency to sleep after a paroxysm.

The attacks almost invariably occurred just as the child awoke from sleep, though the mother thinks that he was sometimes awakened by them. A record of their exact occurrence was kept for eleven days. They never occurred less than five or more than eight times in twenty-four hours, the usual number being six or seven. They were not grouped but were distributed very evenly throughout the day and night. With but few exceptions they did not occur at intervals of less than two hours or more than six hours. For a short time after this they occurred very frequently during the night. There was usually a little attempt at crying during the height of the spasm. There was no incontinence either of fæces or urine so far as is known. The child was more cross and fretful than usual, but not extremely so.

The symptoms were of course referred by the friends to dentition, but the gums showed nothing abnormal. The first tooth appeared early in June when the child was exactly one year of age, while the most serious convulsions occurred in January. The prepuce was very readily retracted. There was slight adhesion on one side which was readily overcome, but there was but little secretion underneath. The record shows that for several days before and after this operation there was no change either in the frequency or character of the attack. Examination of the ears, throat, and nose showed no source of irritation. There was no hernia. There was at no time any elevation of temperature except during the first week when there was bronchitis and diarrhœa. The child showed distinct but rather mild evidences of rickets. The epiphyses were slightly enlarged and there was beading of the ribs. I could not detect craniotabes. There was slight but not excessive sweating of the head. I heard at no time any stridulous cough or anything which could be considered laryngismus stridulus and was unable to obtain any history of such a symptom.

On January 30th there was no material change except that the child seemed a little brighter. The paroxysms had continued unchanged in number and character, although I had given bromide of sodium in daily doses of ten grains. The child had shown for two weeks a strong tendency to constipation. There was occasional distension of the abdomen with slight flatulence. I had devoted considerable attention to the digestion, but was not as rigid, perhaps, in directions as I might have been. The child was breast-fed and received no other diet. The mother was of very nervous temperament and became exceedingly nervous as the child's symptoms increased. Examinations of the breast milk showed it to be of fair color and appearance. The specific gravity averaged 1030 and the cream five and one-half per cent. Nursing had been very irregular. I had found it difficult to induce the mother to nurse regularly, as she dreaded to awaken the child when asleep, fearing a convulsion. I now laid down rigid rules as to the hours for nursing and directed my attention wholly to the digestion, including regulation of the mother's diet and digestion. The bromide was stopped and after each nursing six drops of rhubarb and soda mixture and one drop of fluid extract of cascara were given. On February 3d, four days later, the bowels were not materially loosened. I gave for two nights small doses of calomel and increased the cascara. The bowels soon became regular. On February 9th the number of paroxysms had decreased; on the 10th there were two; on the 11th there was none. Since that date to the time of writing, fifteen months, the child has been continuously well and has had no recurrence of the convulsions. Dr. Grey, to whom I reported the progress of the case, wrote: "It is one of the most conclusive cases I have ever met, and I cannot resist the conviction that there must have been some intestinal product causative of the convulsions." Except for the constipation which was persistent after the diarrhœa ceased, but was at no time especially obstinate, the child did not show any marked degree of digestive disturbance. There was some acidity of the stomach at times, though rarely any regurgitation or vomiting of food. As the case progressed the evidence of intestinal derangement was shown more clearly by increased flatulence. Until late in January these symptoms were not more marked than one sees constantly in practice. I cannot resist, however, the conclusion that the disturbance was due in large part, perhaps wholly, to some intestinal fermentation. I am well aware that such symptoms sometimes disappear as quickly and with as little apparent reason as they developed, and am not inclined to attribute over-much to the treatment. Relief of the flatulence and constipation was, however, coincident with the disappearance of the paroxysms.

The second patient was an Italian boy one year old. He was brought to the Polyclinic on March 12th. He had been an ordinarily healthy child until three weeks before when he began to have convulsions. These had increased in frequency and during the past day or two had occurred at intervals of one or two hours. He was seized with a convulsion while in the waiting room and was taken before the class. The convulsion, however, had ceased, but after a few minutes he suddenly had a distinct but not severe paroxysm of laryngismus stridulus. The attack was short and consisted of three loud, stridulous inspirations which could be heard in the next room. The pupils of the class at once made a diagnosis of croup. While discussing the case, the child made another somewhat suppressed stridulous sound and went into a convulsion which lasted for about two minutes. The face was slightly affected, the muscles about the mouth being chiefly involved. The jaw was closed and the muscles at the corners of the mouth were drawn, giving a ghastly, grinning expression. The arms were drawn to the side in a series of remitting paroxysms increasing in severity.

The fore-arms were drawn across the front of the body, the wrists were strongly flexed, and the fingers were flexed at the metacarpo-phalyngeal articulation. The hand did not assume as distinct a cone-shaped appearance as occurred in the first case. The legs were extended. The toes were strongly flexed, the instep being rounded over and the foot as a whole being adducted so that the toes were drawn against and across each other. The general position of the child was more that of extension than in the first case, but there was no opisthotonos. As the paroxysm relaxed there were a few faintly stridulous sounds, but no actual laryngismus. The child immediately recovered and appeared to be in a perfectly normal condition. When I saw him fifteen minutes later he was vigorously gnawing the end of an enormous baker's bun. He had another paroxysm soon after and went away lamenting the loss of his bun, which had been taken from him. The child's attention at this time seemed to be devoted about equally to his paroxysms and his baker's cake. He was breast-fed, but was freely fed, also, from the table. He gave a history of indigestion and vomiting with the bowels alternately relaxed and constipated. He was markedly rachitic, but no craniotabes could be detected. A brisk cathartic was prescribed and strict rules regarding his feeding were laid down. During the next twenty-four hours the child had over twenty convulsions. They then rapidly diminished in frequency and had ceased at the end of two days. There had been no recurrence at the end of two weeks when he was last seen. The laryngismus also disappeared with the convulsions.

Clinical Memoranda.

AN INTERESTING AND RARE ACCIDENT OF DENTITION RESULTING IN ABSCESS OF THE TOOTH SAC.

BY HENRY KOPLIK, M.D.

The following case is of especial interest and of sufficient rarity to be described at length. The infant was one year old, weaned and breast-fed, two lower incisors and upper left incisor present no signs of rhachitis. The mother says that three days ago the infant while sitting in its chair at the table fell forward striking the face on the edge of the table. Nothing further happened, the infant did not bleed or cut itself in any way. She now, after three days, noticed a swelling on the gums.

Examination showed a swelling over the location of the right upper incisor the size of a white bean; it was tense and cystic; the infant resisted interference. The swelling was distinctly localized, there was no discoloration of the gum, no yellow spot to indicate presence of pus. There were a few erosions of the gums around the upper left incisor, slight amygdalitis, temperature, 102° by rectum. A cyst of the tooth sac was diagnosed and its origin was presumed traumatic. An infection had possibly taken place converting the cystic into purulent contents. The cyst was incised by a small incision running parallel to the long diameter of the jaw, and thus sero-purulent fluid readily escaped; at the bottom of the sac was distinctly felt the eruptving tooth.

This interesting accident of dentition is made especial note of because in the vast material of teething children handled by the writer in the last ten years he has not seen one case of normal dentition which to his mind required incision of the gums. In many cases we find the gums distinctly enlarged over the site of the eruptive incisor, but this enlargement is never cystic, it is firm and at times painful so that one cannot understand how relief is to be obtained by incising such enlargements if such incision could be indicated. In this case the enlargement was distinctly cystic and tense and so localized as to lead to the conclusion that the tooth sac of the incisor had become infected and the result was abscess of this sac.

This would lead us to conclude rather in cases of dentition to shield the enlarged gums from all manner of traumatism either of the mother rubbing them or the use of rings or the cutting process of the lancet. The writer has seen infants whose tooth sacs incisors not yet ready for eruption had been actually rubbed open by the mother or physician leaving a line of infected tooth sacs at the bottom of which could be seen the still immature teeth. When we consider how often anginas affect these infants, it is easy to account for abcess or infection of these sacs during dentition and also in the above case where signs of amygdalitis were present. The more we see of dentition the more we are inclined to strictly leave the process in nature's hands.

A CASE OF ERYTHEMA SIMULATING SCARLATINA.

BY DAVID I. WOLFSTEIN, M.D.,
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The highly instructive series of articles in the September number of The Archives relating to rashes simulating scarlatina leads me to report a case not without interest in this connection.

G. K. æt. two years.—Family history, negative. Past history of the child includes an attack of intestinal catarrh when four months old, a broncho-pneumonia at eighteen months, followed a few months later by a siege of pertussis very defiant to treatment. Since this last illness the child has progressed favorably. I was called on February 23d in the afternoon. The child was restless, apathetic, peevish, and rather depressed. He had a slight cough and mild coryza. The rectal temperature was

104°, the pulse 120. The pulse-respiration ratio was but little disturbed. The lungs show a few dry râles, and were, on the whole, normal. Digestive tract was normal. The temperature next morning was 100°, with an evening rise to 104°, as on the preceding day; coryza a little more marked; throat free; cervical glands not enlarged; tongue coated. On the morning of the 25th I was hurriedly summoned to see a *rash* which mother and nurse feared was scarlet fever. The neck, chest, abdomen, and parts of the back were covered by an erythema which I cannot hope to more accurately describe than by quoting from Osler: "Scattered red points on a deep subcuticular flesh."

The color had not the vivid hue of scarlatina, but still deserved the appellation of a "bright" red. The erythema was distributed uniformly over the surface, and were not at all patchy in character. The usual considerations of isolation, protection of the other children, and conformity with the legal requirements pleaded for a prompt decision, but, notwithstanding the close resemblance, as far as the eruption itself was concerned, the high fever and the time of its appearance, this diagnosis was not made for the following reasons:

1st —Absence of strawberry tongue, of whose pathognomonic significance I am, however, far from convinced.

2d.—Absence of marked pulse acceleration.

3d.—Negative appearance of the throat.

The most potent factor in determining the diagnosis was the prevalence just at this time of epidemic influenza. The coryza and cough, the depression, the active pyrexia had already elicited the diagnosis of influenza previous to the appearance of the rash, and its appearance did not make me waver; on the contrary was only a strengthening point. I regarded this rash as one due to the action of the influenza poison. The subsequent behavior of this case, I think, justified the above view. The temperature persisted for a few days, gradually disappearing, and showing the sub-normal figures incidental to influenza. The rash began to fade twenty-four hours after it was first noted, but desquamation was not seen until the fifth or sixth day, and these occurred as fine branny flakes.

The case was further complicated by an enlarged lymphatic of the posterior cervical chain, which manifested itself about the seventh day, and went on in spite of treatment to suppuration, requiring surgical interference. The occurrence of lymphatic enlargement at so late a day, and that, too, of the suppurative type, when the rash had already faded could hardly be made to support the diagnosis of a possible rubella.

The text-books at my command make very little reference to the subject of influenza erythemas, but I have seen a few cases in continental clinics similar to the one I report. This case appears to me of interest, therefore, as showing a rash appearing in the course of a well-defined case of influenza, which prevents many features of resemblance to those of scarlatina.

Whether the glandular suppuration was also to be attributed to the pyogenic power of the influenza bacillus could not be decided. Culture experiments, according to Pfeiffer's methods, gave only negative results, only the usual pus organisms were found. More recent observations certainly seem to me to contest strongly the position of the so-called pyogenic germs as the sole causers of suppuration. It seems certain that we may consider the typhoid bacillus (probably the tubercle bacillus) if not others, as active agents in this direction. It may be that renewed research will establish for the influenza bacillus a similar power.

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The Adulteration of Drugs.—Dr. Tucker, the director of the New York Health Board Laboratory, in a recent address delivered before the Brooklyn Institute, gives an alarming picture of the adulteration of many of the drugs in common use and frequently dispensed without prescriptions. From 1891 to 1894 inclusive 8,305 samples were examined, and not one-half were of good quality. Among the drugs mentioned as of inferior quality were the bromides and iodides and especially precipitated sulphur, which was found to be impure in three-quarters of the 248 samples tested. In the use of these drugs no positive reliance could be placed upon their possible effects, unless obtained from druggists of known good repute.—*Medical Times.*

Editorial.

TETANY TREATED BY THYROID EXTRACT.

In a recent number of the *British Medical Journal*, Dr. Byrom Bramwell reports a case of tetany successfully treated with thyroid extract. A single case does not ordinarily furnish sufficient evidence upon which to base an opinion regarding therapeutic results. In the present instance, however, the treatment was advised with a definite therapeutic object, based upon a definite line of reasoning and upon undoubted clinical and pathological facts. The remarkable success of the treatment seems to corroborate that reasoning, and seems to show that in some cases at least idiopathic, like operative, tetany is due to defective thyroid secretion, and can be arrested and cured by the administration of thyroid extract.

It has been known for some time that complete removal of the thyroid gland is frequently followed by tetany. This form of the disease is extremely fatal. Gowers says: "When the whole thyroid is removed tetany supervenes in about one-sixth of the cases. This is the average of a series of cases reported by various surgeons, which have varied from 7 to 70 (Wölfler) to 12 in 53 (Billroth). All the patients have been young females still in the developmental period of life. The symptoms of tetany set in during the first ten days after the operation. It does not follow partial extirpation. It has been observed in association with atrophy of the thyroid and myxœdema." In speaking of the pathology of the disease, he says, "The frequent occurrence of the disease after excision of the thyroid gland is a pathological fact of great importance but not yet of clear significance, although most observers consider that a toxic mechanism is the probable explanation. This malady has been thought to be the first result of the process which leads to myxœdema."

The author's opinion is that operative tetany is a manifestation of myxœdema, the result of arrested thyroid secretion. He raises the question whether ordinary idiopathic tetany, also, may not be due to deficient thyroid secretion. If this supposition is true, it can undoubtedly be relieved by the administration of thyroid extract.

In the case reported the patient was a boy of eight years who presented the typical characteristic symptoms. The disease was of six months' duration. The spasms were very frequent and severe, affecting the muscles of the hands and feet, arms and legs, chest and larynx. The pain which resulted from the spasms was frequently extreme. The temperature was subnormal. Cold induced and aggravated the spasms. There were no indications of rickets. Treatment by ordinary means had been very unsatisfactory. The author advised the administration of thyroid extract for the following reasons:

1. Total extirpation of the thyroid gland is followed in a considerable proportion of cases by the development of tetany. This form of tetany is often fatal.

2. In some cases this operative tetany can be promptly arrested and cured by the internal administration of thyroid extract.

3. Operative tetany is in all probability merely a manifestation of acute myxœdema and due to arrested thyroid secretion.

4. Idiopathic tetany, like idiopathic myxœdema, seems to be induced and aggravated by cold.

5. It is not improbable, therefore, that idiopathic tetany may be the result of defective thyroid secretion.

6. If this is so it is probable that idiopathic tetany can,

like idiopathic myxœdema, be cured by the administration of thyroid extract.

In the case reported relief followed almost immediately. The spasms, crowing respiration, pain, dyspnœa, headache, and palpitation rapidly subsided and disappeared. The symptoms had not returned at the time of the report, two months after the treatment was begun, and the mental condition was decidedly improved.

The author believes that the thyroid extract will be found to be a valuable remedy in some cases of idiopathic tetany. It is possible that the clinical condition which we term tetany may, like the clinical condition which we term an epileptiform convulsion, be due to a variety of different causes; hence it does not follow that because thyroid extract can cure operative tetany, and some cases of idiopathic tetany that it will cure all cases of idiopathic tetany. The brilliant results obtained in this case are extremely encouraging and would certainly seem to justify further trial of the remedy in these extremely distressing cases.

DISORDERS OF SPEECH.

THE cure of Demosthenes from stuttering was no doubt due not so much to the pebbles which he put in his mouth, as to an element of his system of treatment which is not so commonly understood. He retired into a solitary place, and to compel his remaining there he shaved one side of his head. He who would break himself from stuttering or stammering must fortify his patience and perseverance by every means which his ingenuity can devise, for he has a most difficult struggle before him. A strong point of the great orator's method was the fact of solitude. It may have been thought that this was to spare the nerves of his friends and fellow-citizens. Nothing hinders improvement more than to engage in ordinary speech. Improvement can only be gained by the slow and deliberate repetition of the troublesome sounds. In the majority of cases stuttering is due to a failure on the part of the vocal organs to co-operate with those of articulation. This may often be corrected by teaching the stutterer to place the organs of articulation in correct position for the desired sound and then concentrate attention on the vowel following it in some simple word. Stuttering and lisping in some cases results from failure to properly arrange the organs of articulation, or to expel the breath from the lungs at the proper time. The physician who can ascertain the cause of stuttering and explain to an attendant the method of cure will have taken the first important step to that end. Sometimes, however, he is able to do vastly more than this. Adenoid growths in the naso-pharynx will occasionally cause stuttering. When due to this cause, their removal renders a cure very easy. Lisping or even stuttering may result from an irregularity of the teeth and can be modified by the dentist. Congenital malformation of the organs of speech is rarely the cause of stuttering. It is sometimes met with, however. The tongue is occasionally too short or too thick, but tongue tie, although by no means a myth, is not nearly so common as the laity suppose. The palate will in a few cases require the aid of the surgeon. Children recovering from serious illness, especially such as affect the throat, will sometimes stutter. This result is seen at times in children who have been overworked in school or who have suffered a nervous shock. It may result from general debility, especially in children of neurotic parentage. Constitutional treatment of the conditions causing stuttering will in many cases remove this defect, but not always. In a vast number of cases the cause lies far back in the nerve centers themselves and is consequently very difficult to reach and to relieve either by treatment or training.

Stammering is quite similar to stuttering. In stammering it is the syllable which causes trouble, in stuttering it is the letter. Causes are not different and treatment varies in detail only.

CHILD LIFE INSURANCE.

THE insurance of the lives of infants and young children which has been the subject of much discussion in Europe, particularly in England, is beginning to attract attention in this country also. While the evils of the system have undoubtedly been much exaggerated, cases of most heartless cruelty are well authenticated. The number of such cases is by no means small. Medical men, magistrates, and coroners in England seem to be unanimous in their opinion that the system of child insurance has resulted in many abuses. Justice Day of England calls the agents of such companies "pests of society." It is the conviction of many well-informed men in England that very extensive loss of infant life yearly results from this practice.

The theory upon which child life insurance was instituted and is conducted is a good one and commendable in its object. It is ostensibly to enable the poor to give their children decent burial should they succumb to the various diseases to which infancy and childhood are subject. The possibilities of abuse, however, are extremely great. Proofs of such abuse are very difficult to obtain. Undoubtedly it is sometimes suspected where it did not actually exist, and it would be very easy to overestimate it or suspect it where none existed. That abuses do exist is undoubted.

While the insurance of infants for criminal purposes does not prevail in this country to any extent, it is clearly demonstated that it sometimes occurs. Insurance of infant lives for the purpose of gain is sometimes effected. The system has gained a certain foothold in this country, sufficient, indeed, to warrant close supervision over all child insurance. We have the warning of England and the Continent, and should profit by it. Measures should be promptly taken to the end that the evil may not assume the proportions among us that it has abroad. Attempts have been made in a number of instances to pass restrictive laws, but they have been thus far foiled. While it is perhaps not necessary to prohibit such insurance we are certainly justified in demanding that it should be under close supervision in order that abuses may not arise.

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Streptococcus Infection from Mother to Fœtus. Ricker (*Centralb. f. Allg. Path. u. Anat.*) reports a case of a woman twenty-seven years of age who died in the sixth month of pregnancy of a disease diagnosticated diphtheria. By careful bacteriological examination the streptococcus pyogenes was the only germ found, and it was also obtained in pure culture from the placenta and from the liver of the fœtus. No lesion was found in the fœtus. The writer recalls a second case, in which the streptococcus was found in the blood of the umbilical veins of a still-born child whose mother died shortly afterwards from the effects of a phlegmon of the arm, which was present at the time of the birth. In neither of these cases was any lesion of the placenta discoverable.—*American Journal of the Medical Sciences.*

Bibliography.

Mentally Deficient Children; Their Treatment and Training. By G. E. Shuttleworth, B.A., M.D. London: H. K. Lewis, 1895. Pp. 140. Price, 4s.

This little book was written with the object of imparting a general knowledge of weak-minded children and approved methods of management. It will prove of interest not only to the general practitioner but also to those who for any reason may wish a brief summary of weak-mindedness in children. The family physician is not infrequently called upon to express an opinion regarding the management of mentally deficient children. Even though he may not profess to speak as an expert, he should have at least a superficial knowledge of the subject. He should be able to advise concerning the desirability of sending the child to school or to an institution and to advise judiciously regarding the general plan of management. The future well-being and happiness not only of the unfortunate child but perhaps of a whole family may depend upon such advice which should never be given without serious thought.

The work in hand does not deal to any extent in pathology or go deeply into psychology, but gives only a review of the more salient features of imbecility.

The mentally-deficient are divided into the three following classes: 1. Congenital mental deficiency in its various forms of microcephalus, hydrocephalus, Mongol type; scrofulous cases; birth-palsies with athetosis; cretinism and primarily neurotic cases. 2. Developmental cases, consisting of eclampsic, epileptic, and syphilitic cases. 3. Accidental or acquired cases, consisting of traumatic, post-febrile, emotional, and toxic varieties.

Maternal impressions, the author believes, have little influence in producing feebleness of mind. In this he is in accord with most authorities. It is, however, an explanation frequently given and is a palatable one to the relatives. In advising regarding the education of such children, he does not lay down a definite rule regarding their removal from home. He believes that neurotic mothers of imbecile children are in many cases the very worst companions and teachers. In such cases he advises removal of the child. An intelligent and sensible mother, however, he believes, may conduct such a child's education more successfully than any hired teacher can do, for no such teacher can supply the long-suffering patience of a conscientious mother. Congenital imbecility, the author regards as more hopeful from an educational standpoint than cases of acquired imbecility.

Annual of the Universal Medical Sciences, a Yearly Report of the Progress of the General Sanitary Sciences Throughout the World. Edited by Charles E. Sajous, M.D. Illustrated. In five volumes. Philadelphia: F. A. Davis Co.

The eighth issue of this well-known work has been unusually delayed, so that it appears less promptly than is its custom. It is, however, fully equal to the issues of previous years.

Diphtheria, croup, and pertussis are included in one chapter prepared, as it has been for several years past, by Drs. J. Lewis Smith and F. M. Warner. The etiology of diphtheria occupies a large share of attention. The authors refer to the fact that during the past year especial attention has been devoted to what is designated as mixed infection, or the occurrence in the diphtheritic patient of other pathogenic germs in association with the Lœffler bacillus. These germs are justly regarded as of the greatest importance in modifying the course of diphtheria, and in causing complications. Dr. Park and others are quoted extensively in proof of the growing belief that there are several varieties of bacilli grouped under the name of pseudo-diphtheria bacilli. The antitoxin treatment of diphtheria is reviewed in considerable detail, but the article was evidently written before the most valuable contributions upon the subject had been made. No summary of conclusions is given. But few additions to our knowledge seem to have been made upon the subject of croup and pertussis.

Contributions to the literature of diseases of the newborn were unusually numerous during 1894, many of them being of great interest. The article on this subject by Dr. Currier is an extremely good one. The section on the dietetics of infancy by Dr. Edwards is also a superior one. But little apparently was written during the year on the subject of artificial feeding that can be considered new. Sterilized milk continues to occupy the attention of the profession and opinions regarding it still differ materially. Buckingham is quoted upon a practical point in the domestic sterilization of milk. When it is heated for sterilization it must pass through a fermenting temperature.

If such a period be unduly prolonged serious damage may be done to the milk. To obviate this danger it is advised that the milk be placed in the steamer already filled with steam and not in a cold one over a slow fire. The milk both in the process of Pasteurizing and sterilizing should be cooled quickly. Authors still differ in their preference for the two processes.

Scurvy is discussed at some length, considerable new evidence having been recently adduced as to its prevalence. Upon the rearing of feeble infants Adams and Holt are extensively quoted. Contributions upon the subject of infantile diarrhœa seem to have been less numerous than in previous years.

An American Text-book of Obstetrics. By American Teachers and Specialists: James C. Cameron, M.D.; Edward P. Davis, M.D; Robert L. Dickinson, M.D.; Charles Warrington Earle, M.D.; James H. Etheridge, M.D.; Henry J. Garrigues, M.D.; Barton Cooke Hirst, M.D.; Charles Jewett, M.D.; Howard A. Kelly, M.D.; Richard C. Norris, M.D.; Chauncey D. Palmer, M.D; Theophilus Parvin, M.D.; George A. Piersol, M.D.; Edward Reynolds, M.D.; Henry Schwarz, M.D. Richard C. Norris, M.D., *Editor*; **Robert L. Dickinson, M.D.,** *Art Editor.* Philadelphia: W. B. Saunders, 1895. Pp. 1,009. Cloth, $7.00.

We review this work in these pages for the purpose of commending certain features and also to express certain opinions as to what a work on obstetrics should contain. Most works on this subject confine themselves too exclusively to the mother, to the neglect of the infant. The obstetrician, as such, is not, it is true, a specialist in the diseases of children. In practice, however, he has the full management of the infant during its first two weeks of life. He too often neglects his duty to the infant and relegates its whole care to a more or less proficient nurse. Less frequently he advises methods of management which are detrimental to the child. The first two weeks of life are very important ones, and the physician in charge of a child during that period assumes great responsibility. In the healthy infant many habits are formed, these may be good or they may be evil, but upon their character the happiness of the child during subsequent months largely depends. Numerous pathological conditions also arise which should be at once recognized and promptly treated.

Many of these conditions are preventable and should not be permitted to occur.

In the present work the infant receives an unusual share of attention, and in this regard is worthy of the highest commendation. The care of the new-born infant in health is described by Dr. Jewett in an article of ten pages. It is on the whole an excellent one, with the exception of certain points regarding artificial feeding. A formula is given which the author says, and with truth, is deficient in fat and contains a too large proportion of albuminoids. Why should a correct formula for a new-born infant not be given, instead of one adapted to an older child with the vague direction that it should be farther diluted for the infant? A work on obstetrics should contain clear and concise directions for the feeding of an infant during the first three or perhaps four weeks. Beyond that age the obstetrician has no interest. It is very important that the diet should be *started* right.

The fifth section of the book contains nearly sixty pages and is devoted to the physiology and pathology of the new-born infant. It was prepared by the lamented Charles Warrington Earle and was not fully completed at the time of his death. The author has confined himself strictly to the pathological conditions incident to the earliest period of life. He first considers the diseases incident to the birth of the child, attention being devoted especially to asphyxia, cephalhæmatoma, and apoplexy. Traumatic injuries are next considered, and this is followed by a chapter on deviations from normal physiological processes. In this chapter icterus, mastitis, and the various diseases of the navel are considered. The next chapter, which is the longest, is devoted to the various infections from which the new-born infant may suffer, and is of the greatest interest. Various unclassified diseases are then reviewed and several pages are devoted to hygiene and therapeutics soon after birth. The section closes with a discussion on premature infants and their management. Taken together these various chapters form one of the most complete and satisfactory monographs on the new-born infant with which we are acquainted.

The book, as a whole, is a superb one. In the profusion and excellence of its illustrations and the beauty of its typographical work it can scarcely be equalled.

Current Literature.

I.—MEDICINE.

Preston, George J.: Tetany; With Report of a Typical Case. (*The New York Medical Journal*, Vol. lxi., No. 23.)

In America this is a rare disease, as is shown by the fact that Griffith after carefully collecting all reported cases up to 1894 had a list containing only seventy-two. In Europe it is not uncommon, while in England it seldom occurs. The author presents the following case as illustrating with unusual exactness the classical symptoms of this disease, it being therefore a typical case:

The patient was a girl of three and a half years. The family history was perfectly good, and the child had always been healthy. There was not the slightest evidence of rickets. Physical examination was negative, and the child seemed very intelligent. When she was one year of age she had the first attack. There would be months in which she was perfectly well, and then the attacks would come on for no apparent reason. An attack observed by the author began almost simultaneously in hands and feet. Her hands assumed the typical form with wrist and elbow slightly flexed. The legs were extended, the heels raised, and the feet slightly inverted. Upon inquiry during the attack she said she had no pain, and except for the fact that she had to stop her play her father said she did not seem to mind the attacks. There was no involvement of the facial or other muscles. After a few moments of tonic contraction the attack passed off. At the time when I saw the patient she was having from ten to fifteen attacks daily. There was no anæsthesia and the reflexes were unaltered. Pressure upon the inner side of the arm or at the bend of the elbow would bring on an attack.

Marked increase in the electric excitability is among the important symptoms. The convulsions may be provoked by pressure upon certain nerves, which naturally suggests the question whether the disease may not have its origin in some such pressure. Whatever its cause the spinal cord appears to be the seat of the disease, rather than the brain. The course of the disease is variable. Recovery may be rapid or very slow, but the prognosis is practically always favorable, only a few doubtful cases of death having been reported. There, is however, a tendency to return of the symptoms after months or even years of absence. The author advises the following treatment: Good hygiene, proper diet and exercise, the bromides and electricity, and perhaps local applications. Chloroform applied locally seems to have a good effect, as does ice to the spine.

Macalester, R. K.: Tetany; A Report of Four Cases. (*American Medico-Surgical Bulletin*, 1895, eighth year, No. 12.)

These cases were observed in the Italian class of the New York Dispensary. The author believes that tetany is rare among all nationalities in this country with the exception of the Italian colony in New York City, where its occurrence is relatively common. The first patient was a female four years of age and was of the continuous type of tetany. Contraction of the feet and toes was striking while that of the legs and thighs was less prominent. The forearm was flexed and held against the chest. The wrist was flexed and drawn down toward the ulner side. The fingers were in opposition to each other, flexed at the phalangeal joints, but extended at the others. The tonic contractions were forcible and the fingers could not be extended without causing pain. These contractions had occurred at intervals of four or five months for two years. The second patient was a boy two and one-half years old. The mother and three sisters had been affected by tetany. The disease was of the intermittent type. The third patient was a boy eighteen years old, the attacks being of the continuous type. The attacks had occurred about two years apart, each lasting about one week. The fourth patient was a boy fourteen months old; the disease was of the continuous type. The condition had been present for one day. The contractions affected all the flexors of the hands and feet and were so great that the patient screamed with pain at any attempt to bend the joints.

From the fact that tetany often appears after or during acute febrile diseases, or in the poorly nourished, with digestive disturbances and consequently a diminished resistance to all infectious influences, the idea would suggest itself that the cause might be sought in the presence of ptomaines and toxic products of bacteria and digestion. From the clinical symptoms, it would seem plausible to consider tetany as the manifestation of some central irritation, due to the body being saturated with toxic products.

Symptoms resembling those of tetany can be produced by extirpating the thyroid gland. Thus, Horsley, Von Eiselsberg, and Wagner saw this condition occur after the extirpation of the thyroid in animals ; Billroth and Kocher in patients after the removal of goitres (thyroid tetany). Horsley and Wagner produced similar symptoms by injecting mucin into the blood of animals, the presence of which puts the central nervous system in a state of irritability. Upon these facts is based the theory that the function of the thyroid is the elimination of mucin in the body.

Goodall, E. W.: Suppression of Urine in Diphtheria. (*Lancet*, 1895, p. 272).

As far as the author knows his former colleague, Dr. G. G. Morrice, was the first to definitely draw attention to the suppression of urine in diphtheria. In an analysis of thirty cases, twenty-seven of which were fatal, the following deductions were made:

Anuria.—This may be partial or complete. In seven of these thirty cases there was total suppression for from eighteen to seventy hours before death; while in twelve suppression was nearly complete for from twenty-four to seventy-two hours. Sometimes the excretion was suddenly arrested, at others there was a gradual diminution in the amount excreted.

In all cases there is albumen, often in large amount. The urine is of normal appearance, and rarely has any sediment. Blood is never present. Vomiting was observed in twenty-three of the thirty cases. In fifteen, vomiting was very frequent, and in seven of these it set in simultaneously with anuria. There is diarrhœa occassionally, constipation is common. Symptoms of cardiac failure are nearly always present from the time when suppression begins.

Post-mortem Appearances.—In fatal cases of diphtherial anuria only two constant conditions are observed, marked pallor of skin and lips, and a contracted and empty bladder. While the kidneys may be paler than usual, they are to the naked eye, usually *normal in every respect.*

There seems to be a difference of opinion as to the cause of the above symptoms. Vomiting and pallor, with albuminuria and scanty secretion, would suggest uræmia. Morrice and Henoch attribute the suppression to an acute nephritis. Cadet de Gassicourt in a thousand cases saw only three fatal from nephritis. Goodhart states the kidneys do not usually show marked change. The author supports his opposition to an acute nephritis, by the fact that in the anuria of diptheria, hæmaturia, dropsy, pyrexia, convulsions, and coma never occur, while these symptoms are common in acute nephritis. In nephritis, recovery is either delayed, or a chronic nephritis results; fatal cases end only after quite a prolonged illness.

In diphtherial anuria death either occurs in a few hours or days, or in cases that recover, recovery is complete.

Treatment that is of great value in nephritis is of absolutely no value in suppression of diphtheria. The author confesses to being ignorant of the cause of the anuria, and suggests as a cause the direct action of the poison of diphtheria upon the nervous mechanism that governs the excretion of urine.

Todd, Geo. B.: A Case of Fœtal Malformation Showing Ectopy of the Liver, Omentum, and Bladder. (*Lancet*, 1895, No. iii., Vol. ii.)

A married woman, primipara, had her labor pains begin rather suddenly. Presentation was normal and all was favorable till head reached the perineum, when further progress was impeded. Delivery was effected with forceps, requiring considerable force with the delivery of the trunk. On the right side of the abdomen, commencing at the ensiform cartilage, a reddish brown tinged tumor about the size of the child's head extended down to the iliac and pubic region on the same side.

The tumor projected outwards through the abdominal wall for three inches, being rounded externally and to the right, while its left margin was free and lay in a vertical direction, measuring three and a half inches. On the under surface of the free edge of the tumor the omphalo-mesenteric vessels could be followed, thus proving it to be the liver. Beneath the liver, the omentum, as a projecting mass, covered in the cavity of the pelvis, extending down over the pubes and partially covering the genital organs, which were rudimentary. The anterior vesical wall was wanting, and the valve-like openings of the ureters could be seen. The anus was in normal position, and bowels moved a few hours after birth.

During the first two days the child did well, at the end of that time slight irritation of exposed parts around the bladder occurred. Irritation gradually gave place to ulceration and necrosis, till the fifteenth day, when the child died.

Moncorvo: The Hypnotic Value of Trional in Childhood. (*Bulletin de l' Academie de Medicine*, Sept. 3, 1895.)

The author first experimented with trional as an hypnotic in the ordinary insomnia, occurring in children of all ages, and also in that of nurslings with dyspeptic troubles, who were sleepless and peevish. Encouraged by its prompt and certain action as well as by its harmlessness, he was soon tempted to enlarge the scope of his experiments. He therefore prescribed it in the wakefulness so common in the eruptive fevers, especially in the first two stages of measles, smallpox, and scarlet fever. Its hypnotic and sedative effects proved of very considerable service in the treatment of children with malaria. It is common to see the malarial poison manifest itself in nurslings by restless nights at a period when the characteristic symptoms have as yet escaped the attention of the parents and even of the physician. In such cases, small doses of trional, 20 to 25 centigrams at bed-time, succeed almost invariably.

In two cases of tubercular meningitis, the cerebral improvement brought about by trional was marked. It succeeded admirably in bringing about quiet sleep of several hours duration, followed by an evident calming effect upon the noisy manifestations of cerebral excitement. He also had recourse to the drug in the psychical disorders of cerebral sclerosis and was able to report a good deal of success in this direction. He also made good use of the narcotic properties of this drug to combat or diminish the insomnia which often accompanies subacute or chronic tuberculosis in young subjects.

Those insomnias which were associated with painful affections, such as disease of the bones, including Pott's disease, as well as the various neuralgias, were most apt to resist the hypnotic action of trional.

Children usually showed a perfect tolerance for trional. Embarrassment of the circulation, respiration, or cerebral activity did not appear. It was usually administered in warm milk, sweetened so that its slightly bitter taste was masked. The dose varied from 20 centigrams to one gram in twenty-four hours.

Among all the drugs possessing an hypnotic action which the author has used among children he regards trional as the most prompt and certain.

Allyn, Herman B.: The Summer Diarrhœas of Infants. (*University Medical Magazine*, 1895, Vol. vii., No. 10.)

The diarrhœal diseases which prevail so largely in summer time are due principally to auto-intoxication, the poisons being developed by decomposition of the food supply. About 90 per cent. of the children who die of these diseases are artificially fed, and, as is to be expected, most of them are fed with cow's milk. In Philadelphia, in the ten years, 1883-1893, the total mortality from "cholera infantum" was 10,514; 8,666 were under one year of age, and 1,467 from one to two years of age. Seibert gives the mortality from diarrhœal diseases in New York City from 1877 to 1887, in children under five years of age, as 31,048.

Important as high temperature is, and not for a moment forgetting or ignoring its enervating influence, it cannot be in itself the most important factor. Breast-fed babies largely escape from fatal summer diarrhœa, although they are exposed to the same temperatures, and the mortality in different parts of our cities varies considerably. After all the most important effect of summer heat is in favoring the fermentation of food, and especially of milk.

Baginsky says that injury to the infantile organism through micro-organisms may arise in threefold manner:

(1) Micro-organisms in themselves but little harmful may at a higher temperature so increase in numbers that they become injurious through the quantity of metabolic products arising from their increased growth. To this class belong, for example, the micro-organisms forming acids, as products of which lactic acid, formic acid, acetic acid, butyric acid, and others arise in the milk. They may act as intense intestinal irritants themselves, or through their known products; their activity can begin outside the infantile organism in the milk, and continue in the intestinal canal of the child.

(2) The micro-organisms which increase so very greatly at a higher temperature may be poisonous in themselves, or the products of their growth can be of a violently poisonous nature, so that even small quantities act injuriously. The poison can arise in the milk outside the infantile organism and be swallowed with the milk. It is of a chemical nature, no longer bound up with the life of microbes, but free and separate from the microbes.

(3) The infantile organism may from its surroundings —air, water, washing, clothing,—receive microbes thriving at a higher temperature, which develop poisons in the infantile intestine from any, even germ-free, food, but especially if the food is not suitable, and if it leaves a residue which is not assimilable and lingers long in the infant's intestine.

The summer diarrhœa of children being the combined result of high temperature upon the food-supply and upon the organism of the child, and the pernicious surroundings of many city children, it follows that special care should be exercised to have children in as good physical condition as possible before the advent of hot weather, and whenever it is possible to remove them from the city to more wholesome surroundings in the country, this should be done.

After an exhaustive review of the symptoms of the various forms of diarrhœa and their treatment the author draws the following conclusions:

(1) The summer diarrhœas of infants are primarily instances of poisoning, the poisons being developed in the food, especially milk, or introduced into the stomach and bowels in some other way.

(2) Apart from decomposition of food, the most important factors contributing to their fatality are high temperature, bad sanitary conditions, uncleanliness of the house and of its occupants, and immorality of the parents or guardians.

(3) The occurrence of these cases should be foreseen in winter and early spring, and efforts made then to secure better living quarters and the highest degree possible of nutrition and health in the infants.

(4) The most desirable thing is a trustworthy source of fresh milk-supply. In the absence of the milk laboratories of Boston and New York, it is the personal duty of the physician to look carefully after the milk supplied to nursing infants. In young infants which have to be artificially fed I have had the best result with peptonized milk.

(5) No infants should pass the summer in the city if they can be removed to the country under fairly good surroundings. This should be done as a precaution before July and before they are ill. If summer diarrhœa develops, removal to a cooler place where fresh milk can be had should be accomplished as soon as possible.

Dana, Charles L.: Pathology of Hereditary Chorea. (*Journal of Nervous and Mental Diseases*, 1895, new series, Vol. xx, No. 9.)

This case presented many interesting features, one of the most interesting being a remarkable hereditary history.

The original sufferer was a great great-grandmother, who was born in Scotland, and who died, as tradition gives it in the family, of chorea. The great-grandmother was also born in Scotland and died in New Jersey of choreic dementia. The grandmother also died of a chorea which began after the age of thirty. The mother of the present patient also died of chronic chorea, which developed after the age of thirty. She died at the age of forty. The patient himself began to develop choreic symptoms at the age of about thirty-three and died at the age of thirty-seven from typhoid fever, having reached about the middle stage apparently of his disease, for, judging from the course of it in his ancestors, the malady lasted ten or twelve years. The disease was transmitted entirely through the female members of the family. It developed with almost absolute definiteness at the age of thirty-two or thirty-three years. The patient died of typhoid fever. The autopsy is reported in great detail and with abundant illustration. There were several anatomical anomalies, interruption in the fissure of Rolando by a bridging convolution being one of the most important. This anomaly is certainly rare, and probably has some significance as an evidence of imperfect evolution of the brain. The arrangement of the retro-central fissure so that it parallelled without any interruption the fissure of Rolando, and ran into the fissure of Sylvius was perhaps of some significance also. The confluence of the occipital fissure with the par-occipital, thus cutting of the *pli de passage*, was a decided anomaly. The simple arrangement of the frontal convolutions with the fissures well divided and not confluent, and the peculiarities of the anterior occipital of Wernicke and of the fourth temporal complete the list of what may be called anomalies. Taken as a whole, it will be seen that the brain carried in its configuration two or three striking evidences of its being an peculiarly developed organ.

General Summary.—Hereditary chorea, transmitted to the fifth generation through the female, death from typhoid fever in the fifth year of the disease. Peculiar anomalies of the brain, interrupted fissure of Rolando, absence of superior *pli de passage*, etc.; general thinning of the gray matter strikingly marked in the central convolutions; areas of great cell degeneration affecting most the angular and small pyramidal layer, the cell defect, primary, the vascular changes minor and secondary. The disease belongs to teratology. It is an innate defect in cell structure.

White, David Kirk: A Case of Dermatitis Exfoliativa Neonatorum. (*Journal of Cutaneous and Genito-Uninary Diseases*, 1895, Vol. viii., whole numer 155.)

The child was well nourished and in perfect health until it was ten days old. The house was then filled by accident with coal gas from which the child seemed to suffer considerably, there being much lividness of the skin. Two days after this incident the child's forehead and face became the seat of a dark-red eruption, followed secondarily by numerous minute sudamina, and thirdly by complete exfoliation of the epidermis covering the affected areas. Within from forty-eight to sixty hours the entire body and limbs were implicated in some stage of the diseased process in the order named. Flakes of epidermis as large as a Columbian postage stamp could easily be detached, by mechanical means, from the body and limbs, while without interference it was shed in much smaller segments. Four irregularly shaped bullæ formed on the anterior aspect of the body, and appeared to be simply the result of friction between the loosened epidermis and the inflamed rete beneath. A secondary squamous exfoliation took place from the body alone, consisting of dry, bright, silvery-white scales, generally about one centimetre in diameter, their original outlines having been marked by fissures which were obliterated in the desquamation. The disease extended much more rapidly on the face and body than on the limbs, and the main severity of the case was shown on the body. There was no perceptible amount of moisture noticed at any time. The case yielded readily to treatment in fourteen days, consisting of a bath of warm boric-acid solution, followed by a thorough application of an ointment of zinc oxide and bismuth subnitrate in lanolin, which was replaced later in the disease by one of ichthyol in lanolin.

No attempt was made to discover the fungus of Riehl. Since the gas from the hard-coal stove was the recognized source of irritation the patient was exposed to, attention is necessarily directed to that fact. While the parasitic theory of Riehl is probably the most acceptable of the day, it must be admitted that peculiar and rare internal or external conditions are necessary for its development. If the carbon monoxide or the effects of its presence in the blood were not the direct cause of the disease, it evidently furnished conditions favorable to the growth of the fungus.

The Amounts of Calcium, Magnesium and Phosphoric Acid in the Urine and Feces in Osteomalacia.

(*Medical News*, 1895, Vol. lxvi, No. iii.)

Newman, in the *Archives für Gynäkologie* writes as follows: The secretion of lime by the kidneys in the progressive stage of the osteomalacia scarcely differs from the normal. In the stage of regeneration of bone, as compared with the progressive stage, and thus as compared with the normal, smaller amounts of lime are excreted with the urine, so that a greater retention than occurs in the first stage would be assumed if one were to judge from the constitution of the urine alone. If, however, the total amount excreted both in the urine and in the feces is made the basis of calculation, it appears that the retention is really less in the second stage than in the first. During the progressive stage the organism suffers a small loss in magnesium. In the stage of bone regeneration, however, small amounts of magnesium are retained. In osteomalacia the normal relation of 1.3 of lime to magnesium is changed in favor of the former. In the first stage there is a pronounced excretion of phosphoric acid, so that the entire organism, and more particularly the bones, suffers the loss of large amounts of phosphoric acid. In the regenerative stage of the disease comparatively large amounts of phosphoric acid are retained in the organism; the quantity corresponds approximately with the loss of phosphoric acid during the first stage. Therapeutically these observations confirm the wisdom of administering phosphoric acid in conjunction with improvement of the hygienic and nutritive conditions.

A Fatal Case of Multiple Neuritis. (*American Journal Medical Sciences*, 1895, Vol. cix., No. 274).

At a recent meeting of the Clinical Society of London, Churton (Medical Press and Circular) reported the case of a rather fragile girl, fourteen years old, who, two years before coming under observation, had chloraic twitching of the eyes, supposed to be due to imitation of a school friend. Some eight months later the shoulders and head also became affected slightly. Five or six weeks after this the girl went to a school-party and became excited and tired, and afterward walked two miles, and was quite exhausted. On the following day she still felt tired, and complained of a sensation of "pins and needles" in the fingers, and was unable to play the piano. On the next day she staggered in walking, and on the following day was in bed and complaining of pains in the calves of the legs. The temperature was now found to be 103°, and the paralysis advanced; gradually use of the arms, legs and trunk was lost, and the reflexes were abolished. Attacks of rapid breathing occurred, and the heart's action was also rapid. Sensibility was preserved, and there was no œdema. Death took place six days after the inset of the acute symptoms. Analysis of the drinking water used showed the presence of considerable quantities of lead, and especially in that from the hot water pipe. It was further learned that the child had been in the habit of taking tea made with water from the latter. The fatal illness was ascribed to multiple neuritis due to chronic lead-poisoning.

An Ingenious Toy. (*British Medical Journal*, 1895, No. 1779, page 272).

A toy has recently been brought out which will possess interest to all who have studied color vision, and the physiological side of optical science. It is extremely simple, consisting of a flat circular disc mounted as a top. One-half of the disc is white, the other black. On the white half are drawn, in different positions, small segments of black circles concentric with the circumference. If one were asked to prophesy what would be the result of the fusion of black and white color sensations—which occurs in spinning the top, one would possibly say grey. But the remarkable fact is nevertheless true that the rings appear colored red, yellow, blue and violet. On reversing the top the order of the colors is reversed. The top is the invention of Mr. E. C. Benham, who calls it the artificial spectrum top. His explanation of the phenomenon is not, however, satisfactory. The top has been shown at the Physiological Society, but the assembled physiologists failed to advance any explanation at all. Color sensations as the result of mixing black and white are not altogether unknown to physiologists, but there has never been any good hypothesis advanced to account for them. The subject demands renewed and careful study, and we shall await with interest a scientific reason for this curious phenomenon, which any of our readers can see for themselves if they purchase the top.

Sacaze: The Role of Staphylococci in the Etiology of Acute Articular Rheumatism. (*American Journal Medical Sciences*, 1895, vol. cix., No. 274).

The author (*Archives Générales de Médecine*) contends that it is often possible in the course of acute articular rheumatism to discover an infective lesion that has preceded the appearance of the articular manifestation. Such a lesion may be conceived to form a portal of entry for micro-organisms—and investigation will often disclose in these lesions the presence of staphylococci, which there is reason to believe play an important role in the etiology of acute articular rheumatism. Sacaze reports a case of acute articular rheumatism with relapse, in which the pains were preceded by a septic wound of the foot, in which bacteriological examination showed the presence of staphylococci pyogènes albi. In two cases of enlargement of the tonsil, attacks of angina were followed by the development of acute articular rheumatism, while in two others such an angina was accompanied by rheumatic symptoms. In a sixth case an attack of acute angina, complicated by purulent otitis was followed by cerebral manifestations and development of the symptoms of rheumatism.

II.—SURGERY.

Mackintosh, M.: Primary Sarcoma of the Kidneys in a Child Aged Eleven Months. (*Lancet*, 1895, Pp. 1371.)

The symptoms in the case were constipation, sickness, and gradually increasing weakness, following in a few days the discovery by the child's mother of a small swelling in the left side of the abdomen. Previous history was negative as was family history. Examination showed a smooth, painless, movable swelling on the left side between the crest of the ilium and the floating ribs.

The tumor was about the size of a small orange and was dull to percussion. There were no distended veins to be seen anywhere, and the skin over the tumor was freely movable. Owing to the difficulty of collecting the urine, the child being a female, the presence of blood was uncertain, though on one occasion the secretion was distinctly bloody. The spleen was slightly enlarged, the other organs seeming healthy. Death took place on the eleventh day after the beginning of symptoms.

On opening the abdomen it was found that the descending colon was firmly adherent to the front of the tumor, the tumor itself being adherent to the posterior abdominal wall. The capsule was not adherent. On opening the kidney the interior was found to be occupied by a large rounded tumor, which crushed aside the normal venal tissue. The microscope showed it to be a round-celled sarcoma.

Keetley: The Causes of Rotation in Scoliosis. (*Lancet*, 1895, No. iii., Vol. ii.)

It is acknowledged by all, except a few pathologists who would seem never to enter a museum, that the peculiar shape of the scoliotic spine is almost entirely the sum of changes in its component vertebræ—i.e., it is only in a small degree the result of changes in the ligaments and articulations. The changes are greatest in a certain very small number, chiefly those at or near the centres of each curve. If one look at the front of a vertebra chosen from the centre of a curve with convexity to the right, we should expect to find the outline of its body wedge-shaped, with the apex towards the concavity of the curve, and more or less marked, with a horizontal groove on the left side, as if the force of growth, having been checked perpendicularly, had spread laterally, so as to form two lips. If the same vertebra be viewed from behind it will probably be found that, though not strictly symmetrical, especially as regards the articular processes, the wedge-shape is not at all pronounced.

If a third view be taken of the vertebra, viz., from above, it will, if a typical case, be sure to be strangely "slewed," as it were, in such a manner that the posterior segment of the vertebra, including the pedicles, the transverse processes, the Canunæ, and the spinous processes, appear to have struggled to retain their normal relations and positions, while the body of the vertebra has been equally determined to deviate to the right.

If it be granted that the prime cause of scoliosis in children is rickets, it cannot be forgotten that in rickets it is at the so-called "epiphysial" cartilages that the greatest abnormality of growth, leading to the major part of each rachitic deformity, takes place.

The epiphysial cartilages of the vertebra body are placed above and below the main bony masses, but the cartilages of growth of the transverse processes, and the spinous process, in fact the whole segment posterior to the body, are placed horizontally with regard to one another. There is also the equivalent of an epiphsial cartilage in each vertrebra body near the root of the pedicle.

Hence rachitic deformity would have a much greater tendency to produce lateral inclination in the body than in the more posterior constituents of the vertebra.

Further, the external projection of the processes gives them an increased mechanical power to check a tendency to lateral inclination.

Therefore, the fact that the epiphysial cartilages above and below each body do not extend backwards to the posterior parts of the vertebra is the prime cause of torsion, and the arrangements of the cartilage of growth of the pedicles, and processes, together with their shape, greatly contribute to the production of torsion by facilitating "slewing" of these parts in a horizontal direction.

Milliken, Samuel E.: Tendon Grafting, Deformities Following Infantile Paralysis. (*Medical Record*, 1895. Vol. 48., No. 8.)

Dr. Milliken presented a boy of eleven years upon whom twenty months before he had successfully grafted part of the extensor tendon of the great toe into the tendon of the tibialis anticus muscle, the latter having been paralyzed since the child was eighteen months old. The cause which was presented showed the advantages of only taking part of the tendon of a healthy muscle which was made to carry on the function of its paralyzed associate, without in any way interfering with its own work. The brace which had been worn since the child was two years of age was left off, the patient walked without a limp, the talipes valgus was entirely corrected and the boy had become quite an expert on roller skates.

Rector: Abdominal Section in a Child Nine Months Old for Obstruction of the Bowels; Recovery. (*British Medical Journal*, 1895, No. 1790, p. 1143.)

For twenty-nine hours before the operator saw the patient, there had been no movement of the bowels, and the child had vomited. The lower bowel was washed out and inflated, and the tumor which was easily made out in the right iliac region, was reduced about one-half. Not being able to reduce the tumor completely by the various means tried, abdominal section was done. The invagination had taken place at the ileo-cæcal region. Slight adhesion had formed, but reduction without laceration of the parts was possible. The child made a good recovery.

Norris, J. Nixon: Death Under Chloroform. (*British Medical Journal*, 1895, No. 1794, p. 1111.)

It was found necessary to circumcise a patient five weeks old, whose condition of phinosis was rapidly causing double inguinal hernia. Chloroform was administered in the usual way. The child was at no time deeply under, but when the operation was about half over he ceased breathing, and the operation had for the time to be discontinued. The head being lowered, and artificial respiration being persevered with, the child again commenced to breathe, and the operation was completed, no more anæsthetic being administered; almost immediately the child, whose breathing had never been good, again ceased to breathe. This time the heart could not be felt beating. Ether was injected, brandy administered by the rectum, and artificial respiration performed, the tongue being held well forward, but though efforts were continued for more than thirty minutes the child never rallied. The child had been very delicate from his birth, arrangements had been made to operate three weeks before, but had to be abandoned owing to his delicate condition. A post-mortem examination was not made. Not more than one drachm of chloroform was used.

Ramnsay: Large Spina Bifida; Excision; Recovery. (*British Medical Journal*, 1895, No. 1796, p. 1199.)

The patient, aged two months, had a large ovoid tumor over the sacral region, which measured eight inches across in its longest diameter, and sixteen inches in circumference. The tumor at birth was only about one-half this size and had rapidly increased. The tumor was tapped by passing a curved aspirator needle through sound tissue an inch and one-half from the margin of the tumor. When the contents were evacuated, it was ascertained that the opening into the spinal canal was just large enough to admit the tip of the finger. Pressure was applied by means of broad bands of strapping pads, and bandages, but the tumor refilled in twenty-four hours. Eleven days later the tumor was excised. An elliptical incision was made on each side of the tumor, meeting above and below, and the skin was dissected away from the sac wall on each side. This was a matter of great difficulty, as the wall was so thin and its components adherent. The sac was punctured and the hole closed with pressure forceps. The sac was then dissected down until the pedicle was only about an inch across. A ligature of stout silk was passed round the pedicle and the sac opened. The interior had the characteristic ventricular appearance. No nerve loops were seen, but a bunch of whitish tissue seemed to terminate in the sac and was enclosed in the ligature. The ligature was tightened and the tumor removed. The pedicle immediately began to bulge, and while looking, the ligature slipped off, and a quantity of fluid escaping. This fluid was allowed to run for a minute, and then the pedicle religatured by snipping a groove round the pedicle with scissors, and using a finer ligature. The two elliptical flaps being found redundant were shaped with scissors, brought together in the middle line, and secured with nine deep silkworm-gut sutures, one of which was made to include the pedicle superficial to the ligature, so as to act as a further security to the ligature. The wound was powdered with a mixture of iodoform and boracic acid, and a dressing of double cyanide gauze and cotton wool applied with a bandage. Owing, probably, to the bandage being applied too tightly, the child, who up to this point had taken the anæsthetic well, suddenly stopped breathing and became cyanosed. The bandage was at once loosened, and the child, after artificial respiration and the application of cold water and other restoratives, soon recovered. The wound closed by first intention, and all the stitches were removed on the eighth day.

Since the operation the child has not had an unfavorable symptom, and now, nine months after the operation, is in perfect health.

Evans, Z, H.: A Case of Spina Bifida. (*International Journal of Surgery*, 1895, Vol. viii., No. 8.)

The patient when first seen by the writer was six years old and was suffering from a spina bifida the size of an orange located over second and third lumbar vertebræ. He also had the deformity of club foot which is so often seen with spina bifida. His physical development was otherwise normal. The tumor was attached by a broad base and was painful on slight pressure. There was a slight opening on one side from which pus was discharged. Upon enlarging the opening it was found that the sac was lined with small scales of bone and necrosed tissue. The writer believed that he had encountered one of those rare cases in which nature had so far effected a cure as to close the opening into the spine. Operation was, therefore, performed and two sacs were found, one on the left side, containing the meninges of the cord and having an opening the size of the thumb, exposing the cord to view, while the sac on the right side contained small fragments of bone and pus. Four deep sutures were now passed and made to include the spinal membranes on either side, so that when drawn together they would bring the opposite surfaces of the wound in close apposition. It was hoped in that way to secure plastic union. The discharge of spinal fluid continued for about three weeks, after which period it gradually grew less in quantity as the wound contracted, filling in the spinal opening with the products of inflammation. At the end of three months the patient had fully recovered from the operation.

Machell, H. T.: Papilloma of the Tonsils. (*Canada Lancet*, 1895, Vol. xxvii., No. 11.)

The patient was a girl of about ten years who was brought to the Toronto Hospital, complaining of her throat. Within the last year her facial expression has changed somewhat; she appeared duller and more listless and was slightly deaf. Her voice was changed, and she spoke thickly. There was also considerable difficulty in swallowing. Her general health was fairly good. Well-marked enlargement of either lobe of the thyroid gland was present, with excessive enlargement of both tonsils, which are studded with closely packed papillary bodies, and, as consequence, difficulty in swallowing, deafness, alteration in the voice, and in the expression.

The tonsils literally filled the throat. One could scarcely believe that any food could be forced past them, so large were they, and so completely did they obstruct the fauces. They were rough and ragged in appearance at first glance. On closer inspection, however, the rough appearance was seen to be made up of numberless papillæ or pedunculated masses, packed closely together and extending downwards as far as one could see or feel with the finger. They also bulged so far forward as to hide the uvula completely and rest on the base of the tongue.

Shortly after admission the child suddenly became ill and died within forty-eight hours. There had been both scarlatina and diphtheria in the hospital. In the early stages the diagnosis lay between these two diseases, but after twenty-four hours a typical scarlatina rash developed. No operation on the throat had been attempted.

Papillomatous tumors of the tonsils are very rare. They are not spoken of in any work on pathology, nor is there any mention made of them in any of the works devoted especially to diseases of the throat. No reference is made to such a condition in the Index-Catalogue of the Library of the Surgeon General's Office.

Some of the interesting points in connection with this patient are the following:

1. The presence of a lipoma of the neck at four years of age.
2. Goitre at seven years.
3. Papilloma of the tonsils first noticed when she was eight years old—that is, at least two years before entering the hospital, thus showing their slow growth.
4. The difficulty experienced in photographing the tonsils.
5. The impossibility of making a diagnosis between scarlatina diptheria in the very early stage of her acute illness.
6. The ease with which enucleation was done just after death.
7. The extreme rarity of papilloma of the tonsils.

Slaughter, R. M.: Abscess of Liver in Children, With Report of a Case of Amœbic Abscess. (*Virginia Medical Monthly*, 1895, Vol. xxii, No. 7.)

Although abscess of the liver in adults is common in temperate regions, and frequent in tropical, in children it is rare. The causes producing this disease seem in children ineffective. A careful search of literature has resulted in finding thirty-six cases recorded, to which the author adds one more. Nine occurred in Great Britain, twelve in Germany, eight in the United States, four in France, two in India, one in Austria, and one in Africa. It is remarkable that so few cases are reported from India, Africa, and other tropical regions, in which abscess of the liver is so common in adults. All writers whose articles are based on experience in these countries, remark this fact. Rouis, in Algiers, in 252 cases, saw only one in a child. Cheevers, in his *Commentary on the Diseases of India*, states that he has never seen a case, and could find accounts of only three. Waring, in 227 cases, notes the occurrence of no case under sixteen years of age.

The average age of occurrence was a little less than nine years. The youngest was an infant of one year; the oldest fifteen years old. Of the cases in which sex was given, thirty-six in number, twenty were boys and sixteen girls.

Injury was the assigned cause in nine cases. In the majority of these it was by no means proved that the abscess was attributable to the injury. In some it may have an indirect cause, as in Monnier's case. In this, the first symptoms immediately followed the lifting of a heavy stone, and clinical history and autopsy indicate that the effort caused the rupture of a vein of the appendix, from which point a thrombus extended into the mesenteric vein. From this, the author believes that thrombi were carried into the liver, and became centers of inflammation, as multiple abscesses were found.

The patient reported was a frail looking colored boy of seven, of parents healthy. The last week in September he complained of diarrhœa and loss of appetite. The author then learned that he had had recently a slight attack of dysentery which apparently yielded to treatment. The physician did not see him again till the sixth of January, when he was covered with an eruption, which resembled chicken-pox, although he had had this disease before. The author inclines to the belief that this was a primary symptom of the approaching trouble. The patient seemed well till January 18, when he began to complain of abdominal pain, ill-defined with no tenderness on pressure. On the following day the temperature rose to 104° F., and the pain increased in severity. There was marked tenderness over the liver. Vomiting occurred frequently. The right lobe of the liver rapidly increased in size, so that, by the 28th, there was perceptible bulging of the ribs, and the lower border could be easily palpated beneath the ribs.

On the 29th, fluctuation could be detected in the lumbar region. An aspirating needle was introduced between the eighth and ninth rib and six ounces of thick chocolate-colored pus was withdrawn. There being no improvement on February 2d, free incision was made and one quart of greenish pus was evacuated. The child grew steadily weaker and died on February 7th.

Willard, DeForest: Erasion, Excision, and Amputation in Joint Diseases. (*Journal of the American Medical Association*, 1895, Vol. xxv., No. 5.)

After a concise but exhaustive discussion of the treatment of joint disease the author draws the following conclusions:

1. When operative measures are demanded, erasion is the preferable procedure, as it gives less subsequent deformity and results in better locomotion. This operation is especially applicable at the ankle, wrist, and shoulder, frequently at the knee and elbow; rarely at the hip.
2. Excision is most useful at the hip. It is also largely employed at the knee and elbow; more rarely at the other articulations.
3. Amputation should be employed in rapid and extensive degenerations at the ankle, knee, wrist, elbow, and in old hip cases which have relapsed after excision.
4. In children, the less mutilatory operation should be first employed, even though repetition is required; but in adults, temporary operations are seldom advisable.
5. The necessity for operative treatment in joint diseases arises from neglect of proper mechanical measures. Protection and fixation of the joint in the early stages of tubercular invasion will nearly always result in a cure with movable joint and good function. These measures together with antibacillary injections and cataphoretic indriving of iodoform are steadily decreasing the number of cases demanding operation. Motion and traumatism are the chief causes of inflammatory complications in tubercular ostitis, and often result in such an amount of suppuration and loss of bone as to demand removal of the diseased tissues.

CRAIG COLONY FOR EPILEPTICS.

Dr. Frederick Peterson has prepared the following answer to correspondents in regard to the Craig colony:

The object of a colony for epileptics is to provide for the four great needs of these unfortunates: 1, to give them schools where they may be educated as other children and young people are; 2, to afford them industrial training in any sort of occupation they may desire to follow; 3, to provide those epileptics a home to whom all other doors are closed; 4, to treat every case of epilepsy according to the best known scientific methods.

The epileptic seizure occurs from time to time, and may last from a few seconds to a few minutes, sometimes longer. Some patients have fits every day, some once a week, some once a month, some only once or twice a year. It is only during the fits that they are incapacitated. At other times they are quite as able to work and study as are other people. But the fact that they have these fits, no matter how rarely, debars them from many of the privileges enjoyed by their more fortunate brethren. They will not on that account be received into the public schools, and can receive no education. They can not attend church or social gatherings. They are shunned by their playmates, and they become burdensome to their families. When they grow to adult life no one wishes to employ them, so, although they are able to learn a trade or profession, the shops and colleges are closed against them. No general hospital receives them as patients, and, in fact, there is no place at all which is open to them except an almshouse or an insane asylum, and as the insane asylum is better than the almshouse, many patients are sent there in preference to a poorhouse. There are 120,000 epileptics in the United States. There are some 12,000 in the state of New York, of whom more than 1,000 are in almshouses and asylums on public charge.

Craig Colony, named for the late Oscar Craig, of Rochester, consists of near 1,900 acres of land in the Genesee Valley. The land is extremely fertile and beautifully diversified with fields, woodlands, meadows, and glens. The farms, gardens, and orchards are already in a high state of cultivation, and will yield this year an income of $12,000 to $15,000.

The law establishing the colony required that it should be arranged on the village plan. To this end, the services of Frederick Law Olmsted, the landscape architect, were secured, and he has prepared the scheme of an industrial and agricultural village upon the best principles. There are already some thirty or forty buildings upon the grounds, which are to be immediately utilized. Craig Colony will not resemble an institution in any particular, but will look more like a country town than anything else. As the patients are received, they will be set to work or at study in various ways. They will take care of the farms, gardens, and orchards, and they will plan and build new houses. There will be among them tailors, shoemakers, printers, bookbinders, masons, ironworkers, carpenters, painters, and so on. In fact, every sort of employment, every sort of recreation, that goes to make up the life of a country village, will be found in this colony, the only difference being that the citizens of this community will be epileptics.

The resources of the land are such that almost everything in the way of food for the inhabitants of this unique village can be raised by themselves, and their surplus agricultural and manufacturing products judiciously managed can make the colony practically self-supporting. Thus the 1,000 patients already upon public support in this State are to be no longer a burden to the taxpayers.

Work has been progressing very rapidly during the year to prepare existing buildings for the reception of patients. The first quota of patients, numbering sixty, will be taken from the almshouses early in November. We propose to receive 200 during the Winter, and perhaps more. Estimating the capacity of the present buildings at 300, we shall need additional buildings during the coming year to accommodate 300 more patients, before the 600 now in the almshouses can be cared for.

The patients taken from the almshouses and asylums will be known as State patients, and they will be provided for before any private patients can be received. They will be sent to the colony by the poor authorities of each county according to a form provided by law.

As soon as all epileptics now upon public charge, eligible for admission to the colony, are provided for, private patients will be received at prices to be regulated by the board of managers, according to the kind and extent of care and attention required. Such patients may, if it be desired, erect cottages for their own use upon the grounds, upon application to the board of managers.

There will be no restrictions as to the age of patients admitted, and the only restriction practically applies to the mental condition. Insane epileptics, or epileptics subject to insane outbreaks, can not be taken into the colony.

The law permits the board of managers to take and hold in trust for the State any grant of land, gift or bequest of money, or any donation to be applied, principal or income, or both, to the maintenance and education of epileptics and the general uses of the colony. Charitably disposed people have here an opportunity for the beneficent use of money, and it is hoped that memorial buildings, in the way of chapel, library, museum, gymnasium, school, shop, or cottage houses, bearing the donors' name, may in time be erected.

The State Board of Charities has jurisdiction over this colony. The president of the board of managers is Dr. Frederick Peterson, 60 West Fiftieth street, New York. The Medical Superintendent is Dr. William P. Spratling, Craig Colony, Sonyea, N. Y.

Sarcoma of the Kidney in Children.—From the literature of this subject Dr. A. K. Steele deduces the following conclusions:

1. These new growths are often congenital.

2. They are usually unilateral; when bilateral it is from secondary infection of the other kidney.

3. They are primarily extra-renal, and surround rather than infiltrate the renal tissue.

4. Round-celled is the most common form of these sarcomas.

5. They are of exceedingly rapid growth, and destroy life by exhaustion.

6. They are uniformly fatal when treated medically, the duration of life being from four to twelve months from the time the disease is first observed.

7. Nephrectomy offers the only hope of cure or prolonging life in these unfortunate cases.

8. More accurate early diagnosis and prompt operative interference has lowered and will continue to lower both the primary and secondary mortality.

9. The extra-peritoneal route is preferable when the tumor is small.

10. When large, a trans-peritoneal incision is imperative.

11. It may be either transverse or vertical.

12. The operation of nephrectomy in these cases is justifiable, and we are not doing our duty as surgeons to our little patients if we withhold the only chance they have for life.—*Medicine.*

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